

SUMRALL, TERESSA C., Ph.D. Early Learning and Development Standards: An Examination of Teachers' Knowledge, Practices, and Professional Development Support and Needs. (2016)

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Early Learning and Development Standards (ELDS) articulate what young children should know and be able to do prior kindergarten. In 2013, early childhood experts in North Carolina revised the state's ELDS and released *The North Carolina Foundations for Early Learning and Development (Foundations)*, which articulates standards across five domains for children birth to age five. Since the release of *Foundations*, several programs and agencies have developed different types of professional development opportunities, including one-time trainings, ongoing training series, and training(s) combined with technical assistance/coaching. The primary purpose of this study was to provide information about preschool teachers' engagement in different types and amount of professional development related to *Foundations*, to document the extent to which teachers have learned how to use *Foundations* with children and families, and to identify additional professional development needs and supports teachers need. Using a community engaged research approach, these areas of inquiry were examined using survey data from 110 preschool teachers and interviews with nine teachers. Results indicated that preschool teachers working in public schools and Head Start programs most often reported participation in on-going training series and technical assistance/coaching, whereas teachers working in the child care sector reported more engagement in one-time trainings and less participation in technical assistance/coaching. Teachers' participation in different types of professional development was related to teachers' familiarity with and knowledge of *Foundations*, as well as their general implementation of standards. Furthermore, teachers reported using

Foundations for general purposes in the classroom such as lesson planning and to inform the assessment process, but they used *Foundations* less often to inform their work with dual language learners, children with disabilities, and families. Lastly, preschool teachers most commonly reported they would benefit from more in-depth training as well as print resources to provide guidance on how *Foundations* can be used to inform their work with children and families. The secondary purpose of this study was to examine the extent to which *Foundations* has penetrated the early childhood workforce in North Carolina using web-based surveys completed by 117 early childhood professionals across the state. Results indicated that many ECE professionals are using ELDS, but there is still more work to be done. Implications and recommendations for effective ELDS implementation are discussed.

EARLY LEARNING AND DEVELOPMENT STANDARDS: AN EXAMINATION OF
TEACHERS' KNOWLEDGE, PRACTICES, AND PROFESSIONAL
DEVELOPMENT SUPPORT AND NEEDS

by

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CHAPTER I

INTRODUCTION

Throughout history, researchers, policy makers, educators and parents have grappled with the question, “What should young children know and be able to do?” This inquiry has been the center of much debate and controversy, and while there appears to be agreement on the importance of high quality early education and care in the development of young children, there is less consensus regarding the skills and knowledge children should develop during these early years. The process of creating Early Learning and Development Standards (ELDS) has been one of the ways in which representatives from states and national organizations have begun to articulate agreed upon goals for young children’s learning.

ECE and the Need for Standards and Accountability

Attitudes and perspectives about early childhood education and care have undergone many changes in the past two decades. Policy-makers and the public in general are recognizing the benefits of early education, thus increasing federal, state and local funding for high-quality educational services for young children. Federal funding sources such as the Child Care and Development Fund (CCDF) aims to improve the affordability, supply, and quality of early education and care programs across states (Martinez-Beck & Zaslow, 2006). Each state makes decisions about the allocation CCDF funds for different purposes such as child care subsidies, quality improvement, and professional development initiatives. Another source of federal revenue is Head Start, which is a comprehensive child development program that works with children from birth

to five years, pregnant women, and their families. Early childhood programs also operate within the public school system, which also uses federal funding (e.g., Individuals with Disabilities Education Act (IDEA) funds and Title 1 funds) as well as state funding (Martinez-Beck & Zaslow, 2006). A quarter of a century ago, there was limited investment in early childhood education by states. Today, approximately four out of five states are currently running preschool programs, and many are moving toward a public provision of early childhood programs that will be accessible for all 4-year-old children (Bodrova, Leong, & Shore, 2004).

Strong support for public investment in early care and education has been strengthened by long-term research studies such as the Perry Preschool Project (Schweinhart et al., 2005) and the Abecedarian Project (Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001). Findings from these studies have underscored the importance of high quality preschool education in both short-term outcomes, such as enhanced school readiness, as well as long term benefits. There is evidence that an investment in high quality early education can improve graduation rates, increase adult earning, and lower crime rates (Reynolds, Temple, Robertson, & Mann, 2001). Unfortunately, these benefits are only the result of high-quality programs, and continued support for public investment in early education depends on continued evidence of results such as these. Thus, there has been a greater call for accountability for programs serving young children.

Standards-based education has been one of the ways in which states and the national government have increased accountability, particularly in K-12 education and more recently in early childhood education. Although there is limited knowledge related to early childhood teachers' use of standards and positive child outcomes, research

findings from K-12 standards-based education studies have shown some positive results. Data collected by the Education Commission of States (2000) found increases in both student achievement and school quality in states that have focused their efforts on aligning components of their K-12 education system with standards. Similar results were found in a study of Title I elementary schools; findings suggested that students in classrooms with teachers who reported using standards, had higher initial reading scores compared to children in classrooms with teachers who did not report awareness or use of standards (U.S. Department of Education, 2001).

Although the impetus for standards in early childhood education stems from a variety of reasons, including the need for greater accountability, an important rationale for ELDS is that they provide teachers with the knowledge and tools they need to be more intentional about the content of their instruction as well as their teaching practices (Scott-Little, Kagan, & Frelow, 2006). This may, in turn, improve child outcomes as it has in K-12 education. However, it is important to note that the National Association for the Education of Young Children (NAEYC) and National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE) joint position statement cautions against using assessments and child outcomes data related to standards in ways that can be harmful to young children (2002). These national organizations stress, “assessment and accountability systems should be used to improve practices and services and should not be used to rank, sort, or penalize young children” (p. 7). Furthermore, the Zero to Three policy center recommends that states develop monitoring and evaluation systems that examine the use of ELDS and their impact on both teacher and child outcomes (Petersen, Jones, & McGinley, 2008).

Early Learning and Development Standards (ELDS) Defined

Early Learning and Development Standards (ELDS) can be defined as documents that articulate what young children should know and be able to do prior to beginning kindergarten (NAEYC & NAECS/SDE, 2002). The Early Childhood Education Assessment Consortium of the Council of Chief State School Officers (CCSSO) has expanded on this definition to be inclusive of learning across all domain of children's development. They define ELDS as:

Statements that describe expectations for the learning and development of young children across the domains of health and physical well-being; social and emotional well-being; approaches to learning; language development and symbol systems; and general knowledge about the world around them. (CCSSO, 2008).

Organizations including the National Association for the Education of Young Children (NAEYC) and the National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE) have taken the position that effective ELDS contribute significantly to a comprehensive, high-quality system of services, that promote young children's educational opportunities and positive outcomes (2002).

Momentum Behind the Impetus for the Use of ELDS

There has been much discussion and debate around the idea of "standards" in the early childhood field. While commonplace in K-12 education, the emergence of standards in early childhood education is more recent and has been met with some resistance (Burns, Midgette, Leong, & Bodrova, 2003; Scott-Little, Kagan, & Frelow, 2003). Many in the early childhood community argue young children's development is far from "standardized" because development is influenced by numerous factors including genetics, interactions with parents, and access to quality early childhood education (Scott-Little et al., 2003). Thus, many question both the utility and equity of ELDS,

particularly if they are used for high-stakes decision-making and accountability purposes (Kagan & Scott-Little, 2004). Resistance also stemmed from other concerns including the fear that ELDS would “academize” early childhood education and that the content of teachers’ instruction would favor certain domains over others (Kagan & Scott-Little, 2004). Despite early skepticism, ELDS have become an important part of early childhood education.

The movement towards standards-based education for early childhood was conceived in part due to national efforts in the late 1980s and early 1990s to improve the quality of early education for young children and to increase the accountability of federal and state-funded programs (Martinez-Beck & Zaslow, 2006). The movement started with the development of the National Education Goals Panel (NEGP) in 1989, which described what children should know and be able to do prior to kindergarten in five developmental domains of learning (Kagan & Scott-Little, 2004). These domains include: 1) physical well-being and motor development, 2) social and emotional development, 3) cognition and general knowledge, 4) approaches toward learning, and 5) language and communication (Kagan, Moore, & Bredekamp, 1995). The seminal work of the NEGP has been used as a primary source for many states’ developing ELDS documents (Neuman & Roskos, 2005).

The passage of the No Child Left Behind (NCLB) act of 2001 followed by the *Good Start, Grow Smart* initiative of 2002, also fueled the standards-based movement in early childhood education (Kagan & Scott Little, 2004; Neuman & Roskos, 2005; Martinez-Beck & Zaslow, 2006). This national initiative aimed at federally funded programs serving preschool-aged children, required programs to develop early learning standards in literacy, language, and mathematics that are aligned with K-12 standards

(Martinez-Beck & Zaslow, 2006). *Good Start Grow Smart* prompted Head Start, a federally funded program serving children and families living in poverty, to develop the Head Start Outcomes Framework (Office of Head Start, 2000). The Outcomes Framework was revised and published a decade later as the Head Start Child Development and Early Learning Framework, and includes standards across eleven domains of development (Office of Head Start, 2010).

Recognizing the value ELDS standards for young children, the National Council of Teachers of Mathematics (NCTM) published *Principles and Standards for School Mathematics* (2000), which addressed preschool standards related to mathematics knowledge and skills (Charlesworth, 2005). This was followed by the publication of *Early childhood mathematics: Promoting good beginnings* (2002), a joint position statement from the National Association for the Education of Young Children (NAEYC) and National Council of Teachers of Mathematics (NCTM), which articulates the need for the development of high-quality early learning standards that support early childhood mathematics education (NAEYC & NCTM, 2002).

These initial acts in history opened the doors for the standards-based movement in early childhood education. Since the birth of this movement over a decade ago the momentum has been building as representatives from states have engaged in efforts to design, implement, and even revise their states' ELDS document(s). Currently, 50 states and the District of Columbia have developed ELDS documents for preschool age children, and forty-seven states and the District of Columbia have created ELDS for infants and toddlers (National Center on Child Care Quality Improvement, 2014). Many of these efforts to develop and implement ELDS have been supported through state and national funding.

A recent effort to support states in the development and use of ELDS has been through the Race to the Top Early Learning Challenge (RTT-ELC) program. This program aims to improve the quality of early childhood education by providing federal grants to states that are focusing efforts to increase the number of low-income children enrolled in high-quality early childhood programs, design and implement integrated early childhood systems and services, and develop and implement appropriate assessments (Administration of Children and Families, 2014). One of the RTT-ELC targeted areas of reform is the promotion of children's learning through the development of common standards and assessments that measure child outcomes (Administration of Children and Families, 2014). To date, twenty states have been awarded RTT-ELC grants, including North Carolina. Awards such as the RTT-ELC have increased both the development and implementation of ELDS in various ways by states.

In the past, the implementation of ELDS has been optional, but greatly encouraged through state initiatives and federal funding such as RTT-ELC grants. This is no longer the case. With the recent reauthorization of the Child Care and Development Block Grant (CCDBG) in November of 2014, the shift from simply having ELDS to the focus on promoting their implementation is evident. For the first time, states are required to implement these standards and provide professional development opportunities that incorporate states' ELDS with the goal of improving the quality of care and education for young children (CCDBG, 2014).

Uses of ELDS and Benefits

ELDS are an important way in which states are developing systems of service delivery for young children. ELDS have the potential to frame the content of early learning experiences, including curriculum, assessment, and teachers' practices, the

content and focus of ECE higher education, professional development, and monitoring of early childhood programs (Neuman & Roskos, 2005; Kagan, Britto, & Engle, 2005; NAEYC & NAECS/SDE, 2002; Scott-Little et al., 2003). ELDS can be seen as the heart of quality early education because these documents articulate goals for children's learning and development (Bowman, 2006). These goals help teachers to know the content and skills that children should be learning and developing during the early years, which impacts teachers' practices. Both higher education and professional development efforts should provide teachers with opportunities to learn about ELDS and practice using them in a variety of authentic ways in the classroom (Petersen, Jones, & McGinley, 2008). Additionally, national and state accountability systems for early education programs should use ELDS as the basis for what is being measured (Kagan et al., 2005).

Although popular in the United States, ELDS are also widely used in other countries. Kagan et al. (2005), emphasize standards as a way of integrating early childhood education (ECE) systems and demonstrate ways in which other countries including Brazil, Ghana, Jordan, Paraguay, the Philippines, and South Africa have used standards to improve the quality and equity of ECE services. They convey the importance of ELDS as the "core of the curriculum, the basis for teacher certification, and the basis for monitoring" (p. 208). When placing ELDS at the core or the heart of early childhood education, there is increased opportunity to develop and align early childhood systems that support higher quality learning experiences for young children. Although coordinated ECE systems are one of the potential outcomes of the effective use of ELDS, there are additional benefits for children and families.

ELDS have the potential to create significant benefits for children's learning and development. The development of ELDS helps to build consensus about important educational expectations or outcomes (NAEYC & NAECS/SDE, 2002; Scott-Little et al., 2003). By establishing coherent, evidence-based expectations for children's learning, teachers can focus curricular experiences and instructional practices in ways that benefit children by increasing school readiness and the potential for positive outcomes later in life (NAEYC & NAECS/SDE, 2002; Scott-Little et al., 2003). When there is a continuum of ELDS that are aligned with curriculum and assessment beginning in infancy and extending through the later years of formal schooling, this contributes to a coherent system that support children as they transition from different educational settings (NAEYC & NAECS/SDE, 2002). Lastly, sharing ELDS with families enhances their understanding of child development and promotes engagement in children's learning (NAEYC & NAECS/SDE, 2002).

Challenges Related to ELDS

In addition to benefits, there are numerous challenges related to the content and implementation of ELDS. For instance, ELDS may be written in ways that make them "rigid, superficial, or culturally and educationally narrow" (NAEYC & NAECS/SDE, 2002, p. 3). The content of ELDS may not be balanced across domains or aligned with curriculum and assessments (Kagan & Scott-Little, 2004). Furthermore, ELDS may not support a progression of learning from birth through the later years of early schooling (NAEYC & NAECS/SDE, 2002).

There are also challenges related to how ELDS can potentially impact individual children. In some states, ELDS may not effectively address children with special circumstances, such as children with disabilities, dual language learners, or children who

have other early experiences or characteristics that can impede learning and development (Kagan & Scott-Little, 2004). There is also the potential for ELDS to be used to make high-stakes decisions about children, such as labeling individual children as “unready” for school or even holding children back a year before going to kindergarten (Kagan & Scott-Little, 2004).

The implementation and use of standards is also rife with challenges. Some teachers may not have access to their states’ ELDS document, which would greatly limit their ability to use standards. In classrooms where teachers have a copy of their states’ ELDS document, they may not effectively use it because they lack the knowledge or skills. In programs where the use of ELDS is not mandatory, teachers may lack incentive or motivation to use the document. Teachers may also have limited time to implement ELDS for activities such as lesson planning, setting up the classroom environment, and observing and documenting children’s learning. There may also be competing interests or priorities that limit the use of ELDS. For instance, teachers may be required to use assessments or curriculums that are not directly aligned to their states’ ELDS document. There may also be different sets of standards that teachers are required to use. For example, Head Start teachers may be required to use their state’s ELDS as well as the Head Start Child Development and Early Learning Framework (HSCDEL), and even when these documents are aligned, their use may be confusing and daunting for teachers.

Effective implementation of ELDS must be supported by states’ professional development systems, which also faces many challenges (Petersen et al., 2008). Unfortunately, the resources used to develop states’ ELDS far outmatch resources allocated to the implementation of standards (Scott-Little et al., 2003). Oftentimes

professional development initiatives include short-term efforts such as presentations, conferences, and workshops and little is known about the effectiveness of such experiences (Scott-Little et al., 2003). When there are multiple ELDS training programs occurring within states, these trainings are often uncoordinated. This may be particularly true when different agencies are responsible for developing professional development programs. Teachers who participate in multiple training opportunities may receive inconsistent and sometime contradictory information, which can lead to frustration and limited use of ELDS. In spite of these challenges, many states, including North Carolina, have embarked on a variety of professional development initiatives to promote teachers' knowledge and effective use of standards.

ELDS Development and Implementation in North Carolina

In 2005 the North Carolina Department of Public Instruction published *Foundations: Early Learning Standards for North Carolina Preschoolers and Strategies for Guiding Their Success*. Following the release of the preschool standards, the North Carolina Division of Child Development published *Infant-Toddler Foundations: Guidelines for Development and Learning for North Carolina's Infants and Toddlers (birth to 36 months)* in 2007. Although these ELDS documents were developed by different entities and targeted different age groups, both documents described goals for children's learning across five developmental domains and specific teaching strategies that support young children's learning and development (North Carolina *Foundations* Task Force, 2013). These documents underscored the importance of goal-directed learning experiences for young children, but they did not contribute to North Carolina's vision of a "seamless birth-through-five years system of early care and education" (North Carolina *Foundations* Task Force, 2013, p. 165).

In 2011 North Carolina's Early Childhood Advisory Council (ECAC) assembled a leadership team that included representatives from the Division of Child Development and Early Education (formerly known as the North Carolina Division of Child Development) and the Department of Public Instruction. The leadership team along with a multi-agency Task Force revised the states' standards and in 2013 *The North Carolina Foundations for Early Learning and Development (Foundations)* was released. The revised document outlines standards across multiple domains of development (i.e., approaches toward play and learning, emotional and social development, health and physical development, language development and communication, and cognitive development) for children birth to age five. In addition to these domains, North Carolina's ELDS also provides information about the development of children with disabilities and children who are dual language learners, highlighting specific strategies to inform teachers' practices. Although there was much collaboration between agencies to develop *Foundations* (2013), there has been little coordination related to implementation efforts. Since the release of the revised *Foundations*, the North Carolina Department of Public Instruction, Division of Child Development and Early Education, as well as other agencies/programs have established professional development initiatives, primarily in the form of trainings. These trainings aim to increase teachers' knowledge and use of ELDS, but they vary by type (i.e., on-going training series vs. one-time training).

There are two primary training opportunities that focus on *Foundations*. The first is an ongoing 7-module training series developed by the NC Early Learning Network in collaboration with the Department of Public Instruction (DPI) titled *Effective Teacher Practices Supporting NC Foundations for Early Learning and Development*. This training series is primarily being implemented with state and federally funded programs including

NC-Pre-K, Preschool Exceptional Children, Title I Preschool, and the Head Start State Collaboration Office (NC Early Learning Network, 2014). These modules include: 1) *Foundations* Overview, 2) Formative Assessment, 3) Promoting Positive Relationships, 4) Classroom Design, 5) Behavior Expectations and Rules, 6) Schedules and Routines, and 7) Directions and Feedback. Each module includes the review of a 30-minute pre-learning assignment, followed by 90 to 120 minutes of training that incorporates the use of PowerPoint presentations, videos, role playing, worksheets/handouts, and small group activities. The second large-scale training opportunity is funded through the Race to The Top Early Learning Challenge Grant and is offered as a single training event that provides an introduction/overview of *Foundations*. This five-hour credit-bearing course (0.5 CEU) is being offered by the Child Care Resource and Referral (CCR&R) Network to ensure a broad dissemination to early childhood programs and family child care homes across the state.

In addition to these two large-scale training initiatives, there are other opportunities to learn about *Foundations*. *It Starts with Us: Solid Foundations, Successful Futures*, was a one-day conference focused on *Foundations* that was held in March 2015 in Charlotte, North Carolina. Additionally, *Foundations* training may be occurring at the center/program/agency level, although little is known about these professional development opportunities since they are rarely reported or regulated. In addition to these trainings, it is possible that some teachers are also receiving technical assistance related to *Foundations* although this is not directly provided as a component of these training(s). For instance, some NC Pre-K teachers who are part of the Teacher Education and Licensure System of Support Program as part of the Early Educator Support, Licensure and Professional Development (EESLPD) have participated in one

(or more) of the large-scale training programs and they are receiving follow-up technical assistance/coaching related to using *Foundations* from their Mentor Teachers and/or Evaluators. It is also possible that teachers are receiving technical assistance from program administrators, licensing consultants, or other training/technical assistance providers.

Need for Current Study

While considerable effort has been invested in developing and revising the documents themselves in the past decade, policy makers now have set their sights on promoting the use of the ELDS to improve the quality of child care programs, working to integrate the standards into early care and education systems in order to promote an intentional, child-centered, goal-oriented approach. With the recent reauthorization of the Child Care and Development Block Grant (CCDBG) in November of 2014, states are now required to implement these standards and provide professional development opportunities that incorporate states' ELDS (CCDBG, 2014).

Unfortunately, there is limited research examining the ways in which states are supporting teachers' implementation of standards through professional development. Thus state-level policy makers do not have data upon which to make decisions regarding policies and the use of resources related to ELDS. Furthermore, no studies have examined the ways in which teachers' use standards in their daily work with children and families. In light of the recent authorization of the CCDBG, further investigation related to ELDS implementation and professional development is warranted. This study can be used to inform states' efforts to implement ELDS by providing basic data on the extent to which ELDS professional development has penetrated different service sectors, an assessment of participant outcomes associated

with different types of professional development, and an indication of additional needs for professional development. Data such as these are critical to Child Care Development Fund (CCDF) Administrators who are responsible for developing a plan to implement ELDS, as well as for state-level policy decisions about requirements for the use of ELDS. It is the goal that CCDF plans and policy decisions related to implementation support teachers in their knowledge and understanding of *Foundations* as well as use of standards.

Teachers' effective use of *Foundations* is influenced by numerous factors. Some factors directly impact teachers' use of standards such as engagement in professional development experiences, access to the *Foundations* document, and supports/barriers that exist at the center/program level. There are also more in-direct or systems-level influences that support or hinder teachers' use of *Foundations*, such as state requirements related to implementation and coordination (or lack thereof) of professional development initiatives. Due the complexity and bi-directional systems or layers of influence, the bioecological theory is useful framework for understanding the current study.

CHAPTER II

THEORETICAL PERSPECTIVE

The proposed study is guided by Urie Bronfenbrenner's bio-ecological perspective, which is a theoretical framework used to understand and investigate the development of humans across the life span (Bronfenbrenner, 2005). This theory suggests that development is driven by complex bi-directional relationships among the characteristics of people, the immediate and distal contexts in which they are situated in, proximal processes that take place within those contexts, and the historical and life course time in which development takes place. These inter-relationships are referred to as the Process-Person-Context-Time (PPCT) model. Although this theory is most commonly applied to understand child development, in the current study the PPCT model is used as a framework to conceptually describe teachers' development associated with the use of ELDS while working with children and families. This theory is also used to understand how teachers' engagement in different types and amount of professional development may increase their understanding and effective implementation of ELDS. Each of the four components of the PPCT model will be described and applied to the current study.

Process-Person-Context-Time (PPCT Model)

Process

Processes, referred to as proximal processes in the bioecological model, are "progressively more complex reciprocal interactions between an active, evolving biopsychological human organism and the persons, objects, and symbols in its

immediate external environment” (Bronfenbrenner, 2001, p. 6). Proximal processes are the heart of the bioecological theory and are described as the “driving forces of human development” (Rosa & Tudge, 2013, p. 243). These processes occur during every day interactions with other people, symbols (e.g., written language), and objects in the developing person’s immediate environments, which can include their home, school and work.

Bronfenbrenner and Morris (2006) note that proximal processes are more likely to influence development when they occur on a regular basis over an extended period of time, are reciprocal in nature, and become increasingly more complex over time. This indicates that one-time experiences or processes with a person, symbol, or object in the environment, are less likely to influence development. Thus, individuals require an adequate amount of exposure to reap the benefits of proximal processes. There are five dimensions of exposure including: 1) duration (i.e., how long?), 2) frequency (i.e., how often?), 3) interruption (i.e., is exposure predictable or interrupted?) 4) timing (i.e., does the timing support development?), and 5) intensity (i.e., how strong?) (Bronfenbrenner & Evans, 2000). Additionally, in order for processes with objects and symbols to be effective, the objects and symbols in the environment must invite “attention, exploration, manipulation, elaboration, and imagination” (Bronfenbrenner & Morris, 2006, p. 798).

The current study conceptualizes proximal processes as interactions between teachers and people, symbols, and objects in their environments that are related to ELDS. This study also takes into account two dimensions of exposure by measuring the amount of exposure teachers have had with training opportunities related to ELDS (i.e., duration) and if they received technical assistance (e.g., coaching, mentoring) related to ELDS which indicates a higher degree of intensity. Specifically, this study will focus on

how the amount and types of professional development teachers experience related to ELDS (e.g., training, technical assistance) and other ELDS supports, are related to or impact preschool teachers' familiarity, knowledge, and use of ELDS.

Person

The person in the Process-Person-Context-Time (PPCT) model is the developing individual. Person characteristics are important to development because they influence proximal processes (Bronfenbrenner & Morris, 1998). It is important to note that person characteristics, which are often treated as the dependent variable (i.e., developmental outcome) are also the precursors or drivers of development, thus they appear twice in the bioecological model. Firstly, they influence the “form, power, content, and direction of the proximal processes” as stated in Proposition II (Bronfenbrenner & Morris, 2006, pg. 798). Secondly, they appear as the developmental outcome, which can be distinguished into two categories: competence and dysfunction (Bronfenbrenner & Evans, 2000). Bronfenbrenner acknowledged the importance of bioecological characteristics or person characteristics that are both drivers of development and developmental outcomes including forces, resources and demands, which will be further described (Bronfenbrenner & Morris, 1998).

Force characteristics are the dispositions of the person that influence development by setting proximal processes in motion and sustaining (or stopping) them over time (Bronfenbrenner & Morris, 1998). A person's dispositions are classified into two types of force characteristics: developmentally generative (e.g., dispositions that promote an individual's ability to initiate and sustain interactions over time) and developmentally disruptive forces (i.e., dispositions that interfere, prevent, or stop proximal processes). According to Bronfenbrenner and Morris (1998; 2006), examples of

developmentally generative dispositions include curiosity, ability to delay gratification, extraversion, responsiveness, and the ability to initiate and sustain processes or activities alone and with others. Examples of developmentally disruptive dispositions include impulsiveness, distractibility, aggression, and difficulties maintaining control of strong emotions as well as behavior (Bronfenbrenner & Morris, 1998, 2006).

Resource characteristics are biological characteristics that can be described as being biopsychological assets and liabilities that influence a person's ability to initiate and engage in proximal processes (Bronfenbrenner & Morris, 2006). Examples of resource characteristics include birth weight, genetic defects, IQ, physical health, and mental health (Bronfenbrenner & Morris, 2006).

Demand characteristics, attributes that either encourage or discourage responses from the environment, are the third person characteristic described by Bronfenbrenner and Morris (2006). Demand characteristics are those that act as an immediate stimulus to other individuals in the environment, such as teachers' age, gender, skin color, and physical appearance. These types of characteristics may influence initial interactions because of the expectations that can immediately be formed. In the PPCT model, person characteristics including forces, resources and demands greatly influence proximal processes.

The current study takes into account teachers' openness to learning about ELDS, which can also be described as a force characteristic. This construct most closely aligns with what Bronfenbrenner referred to as developmentally generative and developmentally disruptive dispositions. This is an important person characteristic to measure, because teachers' dispositions related to their openness to learning about and using ELDS, greatly influence the power proximal processes will have on the teacher.

Context

In addition to the person characteristics previously described, the bioecological theory proposes that contexts also influence the proximal processes that take place within them. Bronfenbrenner's earliest versions of his theory emphasized the importance of studying development in context and proposed the concept of nested, interconnected systems to represent what he referred to as the ecological environment in which development and growth takes place (1979). The system consists of five interconnected subsystems including the microsystem, mesosystem, exosystems, macrosystem, and chronosystem (Bronfenbrenner, 1979, 1994). Each system is unique to the developing person's life; furthermore, each system has bi-directional influences, which indicate that relationships have an impact in two directions (i.e., away from and toward the individual).

Microsystem. The microsystem is the system that is closest to the developing person, and it can be described as the interconnectedness between the developing person and other individuals they interact with on a regular basis (Bronfenbrenner, 1994). The microsystem encompasses the relationships and interactions a person has with his or her immediate surroundings such as family, school, neighborhood, or work environments (Bronfenbrenner, 1994). In the microsystem, bi-directional influences are strongest and have the greatest impact on the developing person (Bronfenbrenner & Morris, 2006). However, influences and interactions in the outer levels (i.e., mesosystem, exosystem, macrosystem, and chronosystem) can still impact the microsystem. Within the microsystem, proximal processes occur and can promote or impair development, but their power to do so depends greatly on both the content and the structure of the microsystem (Bronfenbrenner, 1994).

In the current study, the microsystems of interest include teachers' classrooms, places of employment (e.g., child care centers, schools, etc.), and engagement in professional development opportunities related to ELDS. In the current study, teachers' self-reported uses of ELDS with children in the classroom, and more specifically with children with disabilities and dual language learners, will be examined. The study will also explore center-level supports and barriers related to teachers' implementation of ELDS. For example, center-level supports may include coaching received from a center/school administrator related to ELDS or financial support to attend outside professional development. Barriers may include limited time or resources to effectively use ELDS. Lastly, an important aim of this study is to better understand teachers' participation in professional development related to ELDS, and how the type and amount of professional development influences teachers' implementation of ELDS.

Mesosystem. The mesosystem can be described as the interactions, linkages, or processes between two or more settings containing the developing person that have a direct effect on the individual (Bronfenbrenner, 1994). In other words, the mesosystem is a "system of microsystems" (Bronfenbrenner, 1994, p. 40). An example of the mesosystem could include the relations that occur between children's home and school.

There are many potential influences from the mesosystem that impact teachers' use of ELDS. Teachers' experiences with previous professional development opportunities may impact their participation in more recent trainings or technical assistance related to ELDS. For example, teachers' who have had positive and encouraging experiences with previous trainings may be more receptive to attending trainings or receiving technical assistance related to ELDS. The opposite side of the coin is when teachers' have had negative professional development experiences, which may

limit their willingness to seek out or engage in training and technical assistance related to standards. It is also possible that some teachers surveyed in the current study will have engaged in several professional development opportunities related to ELDS. When multiple state or local agencies implement uncoordinated professional development programs, there is a greater risk for teachers' to receive inconsistent information and/or teachers' may fail to see how the content from trainings and/or technical assistance are interconnected. Although these potential mesosystem influences are not directly measured in the current study, they may impact teachers' professional development experiences as well as implementation of ELDS.

Exosystem. The exosystem can be described as linkages that occur between two or more settings, in which at least one of the settings does not directly impact the developing person, but indirectly impacts processes that occur within the setting in which the developing person lives (Bronfenbrenner, 1994). An example of this for a young child would be the relation between the child's home and the parent's place of employment. Another example would include the interactions between individuals and institutions that have an indirect effect on their development such as the political structure and policies in place within it (Bronfenbrenner, 1979).

The exosystem that will be directly examined in the current study is the linkage between the classroom environment and children's home environment. Teachers can use ELDS in many ways with families to create linkages between these two environments. For example, ELDS can be used with families to share information about child development and goals for children's learning. This information may impact families' ability to support children's learning in the home environment.

There are other exosystem influences that may impact teachers' participation in professional development and implementation of ELDS, although these factors are not directly measured in the current study. For example, within the exosystem, there are numerous national and state level systems such as government, Quality Rating Improvement Systems (QRIS), child care licensing, higher education, department of public instruction, and resource and referral agencies to name a few. Although these state level systems may not directly impact teachers, they indirectly impact processes related to teachers' engagement in professional development as well as use of ELDS. For example, state and national government representatives establish laws making the use of ELDS mandatory or elective for some (or all) early childhood education programs within their state. They also develop budgets that influence both the dissemination of ELDS documents and professional development initiatives. States' QRIS establish accountability measures that may examine teachers' use of standards in their teaching practices as well as their use curriculums and assessments that are aligned with states' ELDS. They may also provide training and technical assistance to help early childhood teachers learn about ELDS and develop the knowledge and skills to effectively put them into practice. Additionally, agencies and organization that operate outside the states' QRIS, such as the department of public instruction, resource and referral agencies, institutions of higher education, and the department of social services/human services, also have policies and programs that support (or hinder) teachers' abilities to effectively use ELDS (Scott-Little, Cassidy, Lower, & Ellen, 2010).

Macrosystem. The macrosystem is the broadest context that includes “overarching patterns of, micro-, meso-, and exosystem characteristics of a given culture or subculture, with particular reference to the belief systems, bodies of knowledge,

material resources, customs, lifestyles, opportunity structures, hazards, and life course options that are embedded in each of these broader systems” (Bronfenbrenner, 1994, p. 40). Bronfenbrenner (1979) posited that within a larger macrosystem, the other systems work in a similar manner for each of the individuals within it but that between macrosystems the differences can be great.

In the current study, the macrosystem includes cultural norms and values related to early childhood education, and more specifically ELDS. Standards are becoming a pervasive part of early childhood education systems, which makes this a critical time to examine teachers’ engagement in different types and amounts of professional development related to standards as well as the ways teachers are using them to improve the quality of care and education for young children.

Time

The concept of time is essential in the bioecological theory and it can be seen at three levels: 1) microtime, 2) mesotime, and 3) macrotime (Bronfenbrenner & Morris, 2006). Microtime refers to what is happening during specific episodes of proximal processes, whereas mesotime can be described as continuity and discontinuity as it pertains to ongoing episodes of proximal processes that occur in a persons’ immediate environment (Bronfenbrenner & Morris, 2006). Mesotime is measured in broader terms such as days, weeks, and even years. Macrotime focuses on the changes and stability of expectations and occurrences in the broader culture that affect proximal processes across an individuals’ lifespan and across generations (Bronfenbrenner & Morris, 2006).

The current study does not lend itself to longitudinal investigation, thus time is not specifically being investigated. Although all four components of the PPCT model are important, specifically in the empirical study of propositions I and II of the bio-ecological

theory, but they are rarely all examined within a single study (Tudge, Mokrova, Hatfield, & Karnik, 2009). Another reason time is excluded from the current study is that although the study is greatly influenced by the bio-ecological framework; the aim of the study is not to test this theory using the PPCT model. Although time, as part of the bio-ecological theory, is not being investigated, it provides the context for why this is an important and timely study. As previously mentioned, ELDS are becoming an increasingly important and pervasive part early childhood education, as evidenced by the recent reauthorization of the Child Care and Development Block Grant (CCDBG, 2014). Therefore, the time is ripe for an in-depth investigation ELDS implementation.

CHAPTER III

REVIEW OF LITERATURE

The review of the literature begins by discussing various ways in which teachers can use early learning and development standards (ELDS). Some of the uses are for teachers' own professional growth, such as their increased knowledge of child development. Other uses described are specific to using standards in classrooms for purposes such as curriculum development, assessment, and individualization for children with special circumstances, including children with disabilities and children who are dual language learners. Another way in which teachers use ELDS is to share knowledge and improve communication with families. Each of the sections describing the various uses of ELDS will begin with a discussion of national recommendations pertaining to ELDS followed by examples of best practices and relevant research when available. The second part of the literature review will focus on professional development. This will begin with a review of key terms and definition of professional development, followed by a brief review of literature that highlights studies featuring specific approaches to professional development. Lastly, a review of literature related to states' ELDS professional development efforts will be provided and gaps in the literature will be identified.

Teachers' Use of ELDS

The overarching goal for ELDS implementation is for teachers' to be more thoughtful, intentional, and reflective about their practices with children and families. In turn, this can lead to improved child outcomes and stronger family engagement in

promoting children's learning. There are a variety of specific ways that teachers can use ELDS in their everyday work with children and families. For instance, ELDS documents can be used to increase teachers' knowledge of child development and understanding about the progression of specific skills. Teachers may also use ELDS to observe and document children's learning, which can be used to design and implement an engaging curriculum that promotes children's learning and acquisition of skills across multiple domains of development. Teachers may also formally and informally assess children's progress towards specific learning goals articulated in ELDS documents and use this information to individualize their teaching approaches to meet the needs of all children, including those who are dual language learners and children with disabilities. Lastly, parents are important partners in supporting children's development, particularly in the early years. Teachers can use ELDS to communicate with families about children's development to foster family engagement in supporting learning across a variety of settings. Each of these potential uses is described in this section.

Increasing Teachers' Knowledge of Child Development

One of the most important reasons for the development of ELDS is to increase program quality by enhancing the knowledge and skills of teachers (Petersen et al., 2008). In the field of early childhood education, there is great variability both within and between programs and states in the levels of professional preparation and teachers' ability to implement effective practices (NAEYC, 1993). Therefore, national organizations recommend that ELDS inform both pre-service and in-service training to increase teachers' knowledge of child development (NAEYC & NAECS/SDE, 2002; Petersen et al., 2008).

Teachers can use ELDS documents to increase their knowledge of child development because these documents typically provide broad goals for children's learning as well as specific benchmarks that children demonstrate at particular age levels (Bodrova et al., 2004). In *Foundations* (2013), improving teachers' knowledge of child development is one of the explicitly stated uses for the ELDS document. Teachers can learn about child development and the progression of children's learning across domains, because the "document provides age-appropriate Goals and Development Indicators for each age level – infant, toddler, and preschooler" (North Carolina *Foundations* Task Force, 2013, p. 2). Having a solid knowledge base of child development and ELDS allows teachers to use this information for curriculum development, assessment, and individualization.

Designing an Effective Curriculum

The position statement on standards put forth by NAEYC and NAECS/SDE (2002) states that "effective early learning standards require equally effective curriculum, classroom practices, and teaching strategies that connect with young children's interests and abilities, and that promote positive development and learning" (p. 6). ELDS describe the "what," or the content that children should be learning, whereas the curriculum is "how" teachers deliver the content by using effective teaching practices and strategies.

Teachers incorporate ELDS into the curriculum in both naturalistic (unplanned) and intentional (planned) ways (Gronlund, 2006). In a naturalistic approach, connections to standards can be seen in all areas of the classroom, including free play in centers, group time, and conversations with children throughout the day. In order to recognize connections or linkages to standards, teachers must be very familiar with their states' ELDS document and ideally would have had professional development or other supports

aimed to increase knowledge and use of ELDS (Gronlund & James, 2008). As teachers become more familiar with standards and become proficient at linking observations of children to ELDS, they begin to understand ways in which they can help support children as they work towards the goals outlined in their states' ELDS document (Gronlund, 2006).

Teachers can also use ELDS in more intentional, planned ways to design and implement an effective curriculum. For example, teachers can plan learning activities or provide materials that specifically relate to children developing proficiency in goals outlined in their states' standards (Kluth & Straut, 2001). Teachers have to decide the best ways to deliver the content to individuals and groups of children. In some cases, teachers may put out materials in a learning center and invite children to manipulate the materials. For example, a teacher may put out threading cards or puzzles with smaller pieces if there are several children in the classroom working on hand-eye coordination, a goal articulated in many states' ELDS document. In addition to making specific materials accessible to children, teachers may also plan large or small group time activities targeted to teach specific skills outlined in ELDS (Gronlund, 2006). In daily routines, teachers may build opportunities for children to practice specific skills outlined in ELDS documents, such as inviting children to set tables for lunch. This task requires children to count the number of place settings at each table and then set out an appropriate number of plates, cups, forks, and napkins. This helps children develop an understanding of one-to-one correspondence, a standard found in many states' ELDS document.

A more concrete way that teachers document how they are incorporating ELDS into the curriculum is by articulating standards within lesson or activity plans (Gronlund, 2006). By including ELDS in lesson plans, teachers become clearer, focused, and more

intentional about the types of activities and experiences they will provide in the classroom. Teachers can also reflect on their lesson plans to ensure they are providing learning opportunities across all domains of development and through multiple formats and modalities. Through this process of reflection and careful review of lesson planning, teachers can find ways to provide multiple, varied, and balanced learning opportunities that will help children develop the skills, dispositions, and knowledge for later school success. Additionally, lesson plans are a way to effectively communicate with parents, other teachers, and administrators about how the curriculum is supporting children's learning of the goals articulated in ELDS documents.

Gronlund (2006) emphasizes that incorporating ELDS into the curriculum does not require a complete transformation in the teaching strategies and approaches employed by teachers. Well-designed ELDS cover a broad range of learning and development, and even though goals for learning are typically broken down into specific developmental indicators or benchmarks, they should be defined broadly enough that teachers can remain flexible in implementing standards into the curriculum (Bodrova et al., 2004). Teaching strategies such as the facilitation of play in carefully constructed learning environments, building learning opportunities into daily routines, and leading small and large group times, can be used to address or embed ELDS (Gronlund & James, 2008). Thus, designing and implementing a curriculum that incorporates ELDS is not at odds with developmentally appropriate practices early childhood professionals hold so dear (Gronlund, 2001). In fact, in many cases, teachers are already providing curricular activities and experiences that support children's learning. The use of ELDS, however, can help teachers become more thoughtful and intentional about the ways in which they deliver the curriculum (Gronlund, 2006).

Assessment

The two types of assessments in early childhood education are those used for accountability purposes and those used for planning (Bowman, 2006). Since the focus of this study is on the latter, it will be the emphasis of this discussion. The Early Childhood Education Assessment Consortium of the Council of Chief State School Officers (2005) defines assessment as a “systematic procedure for obtaining information from observations, interviews, portfolios, projects, tests, and other sources that can be used to make judgments about characteristics of children or programs.” Furthermore, they define authentic assessment as assessments that do not include the use of standardized tests. Using authentic assessment practices in early childhood education is particularly important, since standardized instruments are costly, not valid or reliable for all purposes, and have a great propensity for misuse (Shepard, Kagan, & Wurtz, 1998).

The NAEYC and NAECS/SDE (2002) joint position statement on standards states “tools for assessing young children’s progress must be clearly connected to important learning represented in the standards . . . and must yield comprehensive, useful information” (p. 7). It is important for assessment to reflect, be based on, or align with ELDS, so teachers can accurately assess if children are making progress towards the standards outlined in their state’s ELDS document (LaMarca, Redfield, Winter, Bailey, & Despriet, 2000). Unfortunately, some researchers have noted that the links or alignment between standards and assessments are not always evident (Scott-Little, Lesko, Martella, & Millburn, 2007).

Assessments are an important part of the teaching-learning process because they yield vital information about the skills and knowledge children have obtained. Teachers use assessment information to “gauge what things children already know and

understand, what things could be understood with more practice and experience, and what things are too difficult without further groundwork” (Shepard et al., 1998, p. 9). This information is useful as teachers plan and modify curricular activities, learning environments, and their own teaching strategies aimed to help children make progress in the goals articulated in ELDS documents (Shepard et al., 1998). The assessment process includes observing children to gather information, documenting children’s learning, and evaluating their progress (Gronlund, 2006). A brief description of how ELDS can be used in each of these processes (i.e., observation, documentation, and evaluation) will be further explored.

Observation. The NAEYC position statement (1997) on the assessment of young children states that, “assessment of young children relies heavily on the results of observations of children’s development” (p. 21). Shepard et al. (1998) argue that teachers’ observations are effective for the purpose of keeping track of children’s development, recognizing their accomplishments, and adapting the curriculum within the classroom to meet the ever-changing needs of young children. For most teachers, observation is part of their everyday work in the classroom. In addition to informal observations, teachers should also plan specific times to observe children to better understand their continual progress in the goals described in ELDS (Gronlund, 2006). It may be helpful for teachers to have a copy of their state’s ELDS document close by for reference while making observations (Gronlund & James, 2008).

Documentation of children’s development and learning. In an article describing rigorous academics in early childhood classrooms, Gronlund (2001) describes the need for assessment procedures that include observations, anecdotal records, and a continual process of assessment for each child. There are many ways in

which teachers systematically document their observations of children's development and learning including anecdotal records, work samples, checklists, and interviews (Cress, 2004). Anecdotal records are concisely written observations that objectively describe what is observed (Hearron & Hildebrand, 2009). Work samples, artifacts that demonstrate children's work such as drawings, writing, and cutting samples, are another common way teachers can document how children are meeting or working towards accomplishing specific ELDS (Cress, 2004). Checklists, pre-constructed lists of specific skills, are used by teachers to document how children are working towards meeting standards (Gronlund, 2006). Some states have created checklists based on ELDS for teachers to document children's learning and development (Gronlund, 2006). Lastly, interviews, which are oftentimes recorded and transcribed, are a form of documentation used to question children about what they are doing or about their thinking (Cress, 2004).

Evaluation. After observations have been documented, teachers can use this information to evaluate children's progress towards specific standards (Gronlund, 2006). Gronlund (2006) describes several steps in this process: 1) review documentation, 2) decide what standard(s) are being addressed, and 3) decide how the child is progressing in accomplishing the standard(s). On occasion, one observation or other type of evidence may be enough to determine how the child is progressing, but more often than not, teachers will need to observe children on multiple occasions before evaluating their progress (Gronlund, 2006).

Some states have developed specific tools that streamline the observation-documentation-evaluation process. In Illinois, Personal Digital Assistants (PDA), handheld devices with the states' ELDS programmed into them, have been given to

teachers so they can observe, document, and check off the standards in children's virtual files (Gronlund, 2006). Early childhood education programs funded by the Office of Child Development in New Mexico, use "Focused Portfolios," a method that combines observation notes, identification of ELDS, and evaluation (Gronlund & Engel, 2001). These tools help teachers recognize the relationship between observation, documentation, and evaluation, all critical components of the assessment process. Teachers use the information gathered during the assessment process to develop an intentional curriculum and implement effective teaching strategies supporting children's continued progress towards the goals articulated in ELDS.

Individualizing the Use of ELDS for Children

Although children tend to develop in similar stages and progressions, there is a great deal of variation in how rapidly and evenly their development unfolds (North Carolina *Foundations* Task Force, 2013). Numerous factors influence children's development, including genetics, temperament, socioeconomic status, communities where children live, and children's culture. Studies have shown that there are numerous cultural variations in children's experiences and developmental trajectories (Garcia-Coll & Magnuson, 2000). The NAEYC & NAECS/SDE (2002) position statement on ELDS notes, "the content of effective early learning standards, and expectations for children's mastery of the standards, must accommodate the variations—community, cultural, linguistic, and individual—that best support positive outcomes" (p. 5). Thus, it is critical that ELDS documents are designed to work with *all* children. This means standards should be flexible enough that teachers can integrate "culturally and individually relevant experiences in the curriculum," as well as individualize learning and adapt activities to support positive outcomes for all children, including those with disabilities and children

who are dual language learners (NAEYC & NAECS/SDE, 2002, p. 5; Bodrova et al., 2004; Petersen et al., 2008). Guidance for how teachers can individualize their teaching practices when using ELDS with children is discussed in the following section.

Children with disabilities. The NAEYC and NAECS/SDE (2002) position statement on standards and the Zero to Three Policy Center's (2008) recommendations for states' early learning guidelines for infants and toddlers both advocate for ELDS that are inclusive of children with disabilities. ELDS documents that are inclusive of children with disabilities focus on describing developmental processes as well as identifying what children can do at each stage of development, which allows teachers to individualize for all children (Petersen et al., 2008). Children with disabilities will demonstrate progress on ELDS, but their development may not occur at a typical rate or be even across domains (Gronlund & James, 2008).

When individualizing teaching practices for children with disabilities, teachers can look at benchmarks or developmental indicators for younger children to get ideas about how to best support learning. Additionally, teachers can adapt the curriculum and their teaching strategies to ensure that children with disabilities have access to, and are able to fully participate in learning activities (North Carolina *Foundations* Task Force, 2013). For example, when children choose which centers to join during free play in the classroom, teachers may have a child who is nonverbal point to a card representing the center or activity he or she would like to join. Teachers can make modifications to the classroom environment and materials to help children with disabilities successfully engage in activities and learning opportunities in the classroom (North Carolina *Foundations* Task Force, 2013). For example, teachers may add puzzles with large pieces, big manipulatives, and writing/art utensils with thicker grips for children with

impaired fine motor skills. Teachers may have to provide more assistance when introducing new materials or activities to help children with disabilities be successful (North Carolina *Foundations* Task Force, 2013). Pairing a child with a disability with a peer who can provide support is also a strategy that not only helps the child with the disability, but also supports emotional and social development of both children (North Carolina *Foundations* Task Force, 2013). Lastly, teachers must collaborate with specialists and families to develop the most promising interventions to meet the needs of children with disabilities (North Carolina *Foundations* Task Force, 2013).

Although states are strongly encouraged to provide support and guidance to teachers on how to use ELDS with children with disabilities, this recommendation is not always heeded. A study completed in 2007 examining the implementation of ELDS with 41 states and the District of Columbia found that only 27 states had included guidance on how to use standards with children with disabilities with eight states working towards this goal (Scott-Little et al., 2007). A more recent study examining similarities and differences in the organization of ELDS documents with 10 states, found that within these documents, all states had demonstrated commitment to addressing the needs of children with disabilities, but they varied greatly in the degree to which specific support was provided (Scott-Little, Reid, Kagan, Sumrall, & Fox, 2014).

Children who are dual language learners. In addition to standards being inclusive for children with disabilities, they should also be inclusive for dual language learners (NAEYC & NECS/SDE, 2002; Petersen et al., 2008). Dual language learners (DLL) are “children learning two (or more) languages at the same time, as well as those learning a second language while continuing to develop their first (or home) language” (Office of Head Start, 2008). With the growing number of DLL, teachers with and without

knowledge of children's culture and primary language must learn how to effectively teach this rapidly growing segment of the population. Moreover, teachers must learn how to support first and second language acquisition, understand the role of culture in children's learning, and learn how to individualize and adapt activities to support DLL progress in learning new knowledge and skills (Office of Head Start, 2008).

There are important considerations for teachers to keep in mind when working with DLL. For instance, teachers need to consider children's language when planning and implementing activities to ensure they are supporting DLL progress toward standards across all domains of development (North Carolina *Foundations* Task Force, 2013). Teachers must carefully consider how they will introduce new concepts in ways DLL will understand (Office of Head Start, 2008). Furthermore, ELDS documents should describe how children can show their progress towards standards in languages other than English, or other ways such as work samples and gestures (North Carolina *Foundations* Task Force, 2013; Petersen et al., 2008).

The degree to which states have provided guidance for teachers regarding how to use ELDS with DLL in their ELDS documents varies, but has improved over the last decade. A descriptive study from 2003 that collected data from key informants in 27 states found that all states indicated that their ELDS documents could be used with children from a wide range of developmental levels, including DLL (Scott-Little et al., 2003). However, the authors noted that although the individuals who helped develop states ELDS documents were committed to using standards with all children, very limited support or guidance was provided to teachers on specific accommodations they could make when working with DLL. By 2005, states had shown remarkable improvement and had taken important steps to increase educators' understanding related to DLL and

standards (Scott-Little et al., 2007). Researchers found that out of 41 states and the District of Columbia, 23 states provided some form of guidance pertaining to the use of standards with DLL, while seven additional states reported they were in the process of providing guidance.

Partnering with Families

NAEYC and NECS/SDE (2002) position statement on ELDS states that “early learning standards will have the most positive effects if families – key partners in young children’s learning – are provided with respectful communication and support” (p. 8). The use of ELDS provides an opportunity to bring families and teachers together to support young children’s development and learning (*Foundations*, 2013). Shepard et al. (1998) note that when teachers share information about children’s development and learning, families are able to increase their knowledge about development, have appropriate expectations for children, and understand how the classroom curriculum supports their learning.

Teachers can use ELDS with families to share information related to child development and goals for children’s learning. There are numerous ways that information about ELDS can be shared with families. For instance, some teachers will send home newsletters or create documentation boards in the classroom that demonstrate what children are learning and how it relates to ELDS (Gronlund, 2006). Teachers can also promote families’ ability to support children’s learning by offer suggestions of activities related to ELDS that can be implemented in the home (North Carolina *Foundations* Task Force, 2013). In North Carolina, there is a complementary resource related to ELDS that can be provided to families (Gallagher, 2013). Teachers can share this document with families during parent orientation, home visits, and parent-

teacher conferences as a way to let families know what knowledge and skills children should be developing as well as the ways they can support children's learning in the home environment (Gallagher, 2013; Gronlund, 2006). ELDS can also serve as a tool to facilitate teachers' and families' observations of children's progress, which provides a more complete picture of their development and learning (Gronlund, 2006). When teachers share their observations of children's development with families, this opens the door for families to reciprocate by sharing their own observations of children's behavior and skills across varied contexts, including the home environment. For example, children may demonstrate a skill at home, but not in the classroom. Families may be able to share strategies or information that can help teachers support children's continual progress related to that skill in the classroom environment.

ELDS can be implemented for purposes such as curriculum development, assessment, individualizing learning experiences for children with disabilities and dual language learners, and partnering with families. Research related to ELDS has tended to focus on the both the content and alignment of standards rather than teachers' use of ELDS. Additional research is needed to understand how standards are impacting the practices of early educators (Scott-Little et al., 2006). This is particularly relevant since one of the primary purposes of ELDS is to guide and support teachers' practices (Scott-Little et al., 2003, 2006). It is also critical to learn about the ways in which professional development efforts related to ELDS supports teachers' use of standards in their work with children and families.

Professional Development

Several national organizations have highlighted the critical role of professional development in ELDS implementation (NAEYC & NAECS/SDE, 2002; Petersen et al.,

2008). In order to understand the importance and relevance for ELDS professional development, the following section will begin with definitions of relevant terms. This will be followed by recommended practices in professional development. Next, a brief review of relevant research on professional development approaches including training and technical assistance (i.e., mentoring, coaching, and consultation) within early childhood will be examined. Lastly, a description of ELDS professional development will be provided.

Definition of Professional Development and Associated Terms

The term “professional development” is ambiguous, and in general, there is a lack of consensus regarding its’ definition (Buysse, Winton, & Rous, 2009; Cherrington & Thornton, 2013; Maxwell, Field, & Clifford, 2006; Spodek, 1996). Several national organizations as well as numerous researchers have each developed their own definition of professional development as well as definitions for specific professional development activities such as technical assistance, coaching, consultation, and mentoring. Unfortunately, there is a lack of agreement on what each of these professional development approaches means, how and when they can be used to enhance professional development efforts, and whether or not they are actually effective in improving professional practices (Martinez-Beck & Zaslow, 2006).

Recognizing the need for consensus on the definition of professional development and related activities, the National Association for the Education of Young Children (NAEYC) in collaboration with the National Association of Child Care Resource and Referral Agencies (NACCRRA) jointly developed a glossary of professional development terms (2011). This glossary includes definitions and information related to professional development approaches including the focus of the approach, the role of

relationships, processes involved in facilitation, duration, and methods of delivery. They define early childhood education professional development as the following:

A continuum of learning and support activities designed to prepare individuals for work with and on behalf of young children and their families, as well as ongoing experiences to enhance this work. These opportunities lead to improvements in the knowledge, skills, practices, and dispositions of early education professionals. Professional development encompasses education, training, and technical assistance. (p. 5)

The NAEYC and NACCRRRA conceptual model includes three overlapping circles that represent education, training, and technical assistance, which are the three categories included in their definition of professional development. The current study focuses specifically on two aspects of the conceptual model, training and technical assistance (i.e., mentoring, coaching, consultation). Each of these terms will be defined and examined with a review of relevant literature. First, however, principles of professional development will be further explored because regardless of which approaches to professional development are used, they should always encompass these foundational principles.

Principles of Effective Professional Development

The growing movement towards evidence-based practices, accountability, and standards-based education, has led to the recognition of professional development as an effective approach to preparing and improving the practices of early childhood professionals (Buysse et al., 2009). Numerous organizations and researchers have provided guidance and recommendations for effective professional development. From a bio-ecological perspective, many of these recommendations for effective professional development are similar to characteristics of effective proximal processes. For example, the following section will describe how effective professional development is an ongoing

process. Bronfenbrenner's theory also describes how proximal processes, which are the drivers of development, are most effective when they occur on a regular basis over an extended period of time (Bronfenbrenner & Morris, 2006). In essence, they are one in the same. Similar connections between the bio-ecological theory and principles of effective professional development can be made throughout the following section.

The following principles of effective professional development have been extrapolated from the NAEYC's position statement (1993) on professional development, NAEYC and NACCRRA's (2011) ECE professional development glossary, as well as recommendations from researchers who have examined professional development. Each of these will be described in more detail.

Ongoing process. Effective professional development is an ongoing process, thus, early childhood professionals should continuously engage in activities and learning experiences to enhance their knowledge and skills related to working with young children (NAEYC, 1993). Although professional development is recommended to be an ongoing process, meaningful learning and professional growth is more likely to occur when there are opportunities for people "to engage with waves of related ideas (Fleet & Patterson, 2001, p. 10). Unfortunately, the uncoordinated professional development efforts at the local, state, and national levels have produced an abundance of single-session trainings and workshops that lack integration between ideas and topics (Winton & McCollum, 2008; Fleet & Patterson, 2001).

Structured as a coherent program. NAEYC recommends that professional development opportunities be "structured as a coherent and systematic program" (1993, p. 7). Oftentimes, professional development opportunities are fragmented for reasons such as limited coordination between agencies/programs/organizations that offer

professional development. NAEYC (1993) refers to this as “scatter-shot” professional development and cautions that this approach can lead to duplication or gaps in services, contradictory or inconsistent information, and a lack of integrated information. There is growing agreement that current early childhood professional development efforts at the local, state, and national levels are fragmented at best (Winton & McCollum, 2008).

Buyse et al. (2009) contribute the fractured nature of professional development systems in part to a lack of consensus on definitions of professional development and related terms and limited shared vision for organizing professional development efforts.

Respond to individuals. Professional development is more likely to be successful when these experiences respond to the background, experiences, and current contexts of participants (NAEYC, 1993; Mitchell & Cubey, 2003; Fleet & Patterson, 2001). Included in a person’s background are aspects of the individual’s culture, language, and abilities (NAEYC & NACCRRA, 2011). Professional development experiences need to be responsive to individuals and build upon their knowledge and skills that can be applied to their current positions. Regardless of the type of professional development approaches employed (e.g., training, technical assistance, coaching, etc.), professional development activities should be sensitive to the unique needs of learners and account for individuals’ levels of understanding, experiences, and learning styles.

Links theory, research, and practice. Successful professional development experiences should be structured in a way that connects theory, research, and practice (NAEYC, 1993; NAEYC & NACCRRA, 2011). In a study by Fleet and Patterson (2001), researchers noted the importance of balancing theory, research and practice. They found that teachers were able to build their working knowledge of early childhood education through spirals of engagement with many aspects of theory and practice over

time. Kwong and Kwong (2000) caution that traditional professional development methods tip the scale towards research and theory when practitioners are more interested in practice. In an effort to overcome such challenges, they suggest that professional development efforts should adopt strategies that offer a balance.

Competent providers. Providers of professional development should have adequate knowledge and experience in the subject matter/topic (NAEYC, 1993). Additionally, professional development providers should have knowledge of adult learning principles (NAEYC & NACCRRA, 2011). Findings from Cherrington and Thornton's (2013) study of blended action professional development (i.e., small groups of learners who come together to work on issues with support of facilitators using communication technologies) suggested the need for having facilitators to provide support and feedback to participants. Professional development providers bring fresh perspectives, which may challenge or provide alternative ways of thinking. The impact of all professional development providers is enhanced when they build trust with and between participants, encourage reflection through thoughtful prompting and questioning, and provide useful resources that enhance the learning experience (Cherrington & Thornton, 2013).

Active, hands-on, interactive approaches. Professional development experiences are more effective when providers/facilitators use an "active, hands-on approach and stress an interactive approach that encourages students to learn from one another" (NAEYC, 1993, p. 9). Gronlund and James (2008) found that implementing professional development with teachers is more effective when multiple strategies such as presentations, activities, and discussions are employed with playful approaches and dispositions. Related to this principle is the recommendation that professional

development opportunities provide resources to ensure access for all participants (NAEYC & NACCRRA, 2011). For example, trainings related to early childhood assessments may be more effective if teachers are provided with the assessment tool during the professional development experience. Otherwise, these teachers may not have access to the assessment tool once they return to their places of work. Furthermore, trainings should incorporate activities where teachers practice using the assessment.

Contribute to positive self-esteem. Effective professional development experiences should promote positive self-esteem in learners by recognizing the skills and resources individuals bring to the learning experience (NAEYC, 1993). Gronlund and James (2008) note that an important responsibility of professional development providers is to help teachers recognize the things they do well and build upon their strengths. In their guidebook addressing professional development, they highlight the importance of fueling teachers' passion for working with young children, which is strengthened when providers of professional development contribute to building participants' positive self-esteem.

Opportunities for application and feedback. Successful professional development experiences should include opportunities for participants to apply and reflect on what they have learned, as well as embed opportunities for learners to be observed and receive feedback (NAEYC, 1993). Participants are more likely to have positive learning outcomes if they have opportunities to use what they have learned, reflect on what it means, apply information in their work, and receive feedback on their practices (NAEYC, 1993, p. 9). Mitchell and Cubey (2003) emphasize that professional development is more effective when participants have the opportunity to investigate and

reflect on their practices within their own early childhood settings. In the context of their own workplace, participants are able to collect and analyze data as a method of examining and evaluating their practices.

Participant involvement in professional development. Early childhood professionals should be engaged in planning and designing their professional development program (NAEYC, 1993). When professionals participate in this process they have more control, investment, and personal responsibility for their own learning (NAEYC, 1993). NAEYC and NACCRRA (2011) describe and promote the use of individual professional development plans (IPDPs), which are documents that frame and connect various aspects of professional development experiences to each other as well as to essential knowledge and professional standards. These documents are developed and regularly reviewed by early childhood professionals in collaboration with their supervisors, providing professionals with the opportunity to reflect on their knowledge, practices, and professional development goals.

Encourage awareness and promote change. Mitchell and Cubey (2003) emphasize awareness and change as important outcomes of professional development. Effective professional development provokes critical reflection and encourages learners to investigate and challenge deeply held assumptions and thinking (Mitchell & Cubey, 2003; Dall’Alba & Sandberg, 2006). Providers of professional development should encourage participants to develop an understanding and awareness about their own thinking, beliefs, and attitudes so that participants can begin to alter or make positive changes to their current perspectives and practices.

Addresses a continuum of children’s abilities and needs. Lastly, effective professional development that pertains to children should address a continuum of young

children's abilities and needs (NAEYC & NACCRRA, 2011). Furthermore, effective professional development should support educational practices that are inclusive of diverse children and families (Mitchell & Cubey, 2003). Thus, professional development opportunities related to ELDS should incorporate ways to use standards with children with special circumstances, including those with disabilities and dual language learners.

Research on Early Childhood Professional Development

The following review of the different types of professional development opportunities as described by NAEYC and NACCRRA (2011) will include definitions and a review of studies that have utilized each approach. It is important to note that even though these professional development approaches are being discussed as discrete processes, many professional development programs and initiatives use a combination of approaches. NAEYC and NACCRRA (2011) report that although there may be one predominant method of professional development, most professional development programs include multiple approaches. Additionally, each professional development experience, regardless of type(s) (e.g., training, mentoring, coaching, consultation, and combination of multiple approaches), will vary on the degree to which they adhere to effective principles of professional development that were previously described.

Training. Training can be defined as a single learning experience or series of experiences that are specific to “an area of inquiry and related set of skills or dispositions” (NAEYC & NACCRRA, 2011, p. 7). Training, which typically takes place outside of higher education, consists of activities and learning specific to early childhood programs (Maxwell et al., 2006; Tout, Zaslow, & Berry, 2006). The goal of training is to build or enhance the knowledge, competencies, and skills of early childhood professionals (NAEYC & NACCRRA, 2011; Sheridan, Edwards, Marvin, & Knoche,

2009). Training can focus on “information dissemination; comprehension of content; application of knowledge or skills, and related attitudes and dispositions; analysis or synthesis of content; or a combination of these” (NAEYC & NACCRRA, 2011, p. 7). Training activities and events can include workshops, conferences, and presentations that provide information with the goal of affecting professionals’ practices (Sheridan et al., 2009). NAEYC and NACCRRA (2011) recommend that professionals who deliver trainings or training series should have knowledge and expertise in the content being delivered and should also be skilled at working with adult learners. The format of training typically does not include sustained contact between the trainer and participants, and most often the flow of information is one-directional (Sheridan et al., 2009).

The literature on training has been somewhat mixed. A meta-analysis of studies published between 1980 and 2005 by Fukkink and Lont (2007) found that specialized training does improve the professional competencies (i.e., attitudes, knowledge, and skills) of early childhood teachers ($d = 0.45$, $S.E. = 0.10$). Another interesting finding from this meta-analysis is that large-scale programs designed for a variety of training formats and to a wide variety of learners are not as effective. Furthermore, findings were not equal across all domains (i.e., attitudes, knowledge, and skills), and gains were somewhat larger in early childhood professionals’ attitudes, compared to knowledge and skills. It is possible that changes in attitudes must precede changes in skills and practices, which tend to take more time. Thus, behavioral changes may be more likely to be an outcome of professional development opportunities that occur across time and include approaches such as coaching and consultation in addition to ongoing training. Matthews, Thornburg, Espinosa, and Ispa (2000) found that early childhood practitioners’ who participated in a two-year training program, showed significant

improvements in both the global quality of their classrooms and quality of interactions. Teachers and family child care home providers demonstrated more sensitivity in their interactions with children and their attitudes about developmentally appropriate practices also improved, although their level of harshness with children remained the same.

Although the results of many studies have been encouraging, others have not led to such positive conclusions. For instance, Neuman and Cunningham (2009) found that participation in three-hour training on early language and literacy had no impact on teachers' knowledge. Additionally, when studies from the meta-analysis previous described (Fukkink & Lont, 2007) were examined individually, not all studies yielded positive outcomes. In fact, in some studies training produced no effects for teachers. Researchers found that training programs that include large-scale interventions, delivery at multiple sites, and lack of a clear curricular focus were associated with "null" results. The researchers noted that this finding might be in part due to a lack of alignment between the training content and assessment measures, which may be a concern with other studies that have examined the association between training and teachers' outcomes.

Technical assistance. Technical assistance is defined as targeted supports provided by professionals who have knowledge of subject matter as well as the skills needed to "develop or strengthen processes, knowledge application, or implementation of services by recipients" (NAEYC & NACCRRA, 2011, p. 9). Additionally, technical assistance is typically delivered on an individual basis or with small groups. In the following section, specific types of technical assistance include mentoring, coaching, and consultation. Each type of technical assistance (i.e., mentoring, coaching, and

consultation) will be defined, described, and a brief review of the literature highlighting a few studies will be summarized.

Mentoring. Mentoring can be described as a relationship-based process between early childhood professionals who are in similar roles where a mentor (i.e., the more experienced individual) provides guidance and support to a less experienced mentee on an ongoing basis (NAEYC & NACCRRA, 2011; Snyder et al., 2012). For example, a more experienced teacher may be asked to mentor a new or novice teacher. Relationships are at the heart of mentoring, requiring both the mentor and mentee to develop trust and mutual respect over time. The focus of mentoring can be on specific topics or practices, but the process usually begins by establishing roles and setting goals. This is followed by the “facilitation of adult learning techniques such as guided self-reflection, resulting in the application of new ideas to the mentees professional practice or personal disposition” (NAEYC & NACCRRA, 2011, p. 10).

The literature on mentoring is fairly limited and has primarily focused on mentoring programs aimed to improve the language and literacy practices of classroom teachers. The majority of these studies have compared language and literacy training programs to training + mentoring combination programs. Assel, Landry, Swank, and Gunnewig (2007) examined the effectiveness of training vs. training + mentoring programs with a sample of 603 pre-k children enrolled in three types of early childhood settings (i.e., Head Start, Title 1, and universal pre-kindergarten). In this study, all teachers’ received a four-day training related to one of two language and literacy curriculums. The training occurred in small groups and was both instructional and experienced-based. Additionally, the training + mentoring group received 1.5 hours of mentoring twice a month. Although outcomes related to teachers’ language and literacy

behaviors and practices were not reported, the study revealed positive findings related to child outcomes. In classrooms where teachers received training, children's skills in language and literacy grew at greater rates than children in the control group, and this finding was most prominent in Head Start programs. The impact of the mentoring program in addition to training was less clear. Mentoring was only found to be helpful in Title 1 and universal pre-K classrooms and its effects were noticed for literacy rather than language skills. Jackson et al. (2006) evaluated the effectiveness of a professional development series of workshops lasting 15 weeks, with and without a mentoring condition (4-6 mentoring sessions across 2 months). The study included 22 early childhood teachers and 230 children. Teachers in the training and training + mentoring groups improved significantly in the quality of literacy environments and literacy practices, compared to the control group. Interestingly, findings indicated that children in the classrooms with teachers who were in the training + mentoring condition, did not have greater literacy gains compared to children in classrooms with teachers who only received training. The researchers noted that the sample size of the training + mentoring group may have been too small to detect differential gains relative to the control group.

Coaching. Similar to mentoring, coaching is also a relationship-based process led by a coach who has expert knowledge and specialized skills in working with adults, but unlike mentors, coaches often serve in positions or roles other than the persons they work with (NAEYC & NACCRRA, 2011). Coaches aim to build capacity for specific professional dispositions, skills, and behaviors for individuals and groups (NAEYC & NACCRRA, 2011). Rather than dictating priorities, coaches often assist teachers in identifying their needs and developing plans for improvement (Herll & O'Drobinak, 2004). The process begins with an agreement between coaches and individuals to set

guidelines and goals, followed by meetings that include a combination of “questioning, listening, observations, reflection, feedback, prompting, modeling, and practice” which occur in the child care setting (NAEYC & NACCRRA, 2011, p. 11). The process ends at the conclusion of the coaching program or when goals have been achieved (NAEYC & NACCRRA, 2011).

As a practice-based professional development approach, coaching has stimulated much interest among the early childhood education community. Similar to mentoring, a majority of studies have focused on coaching programs targeted to improve language and literacy teaching practices (Tout, Isner, & Zaslow, 2011). Coaching is also commonly used in states’ QRIS systems, but there is little research documenting the type, amount, or effectiveness of various coaching approaches (Tout, Zaslow, Halle & Forry, 2009). In a recent review of 48 articles related to coaching, researchers found that a majority of studies (26 out of 44) were concerned with the impact of coaching on positive outcomes for early childhood professionals above and beyond training alone (Isner et al., 2011). Nearly all of these studies incorporated other types of professional development in addition to coaching (38 studies out of 44). Approximately half of the studies (21) examined practitioners’ outcomes, including their knowledge, attitudes and satisfaction with the coaching experience. Eight studies found no evidence of positive outcomes for practitioners’ and 13 studies indicated positive results. These positive outcomes included satisfaction with the coaching experience (six studies), increased knowledge (two studies), and positive attitudes about childrearing (seven studies). Isner et al. (2011) concluded that even though a few studies found positive outcomes for early childhood practitioners, there is limited evidence that coaching significantly impacts practitioners’ knowledge, attitudes, and beliefs. They caution that improved

measurement techniques may be needed to capture specific dimensions of practitioners' knowledge, attitudes and beliefs that are most likely to be impacted by coaching. They also note that sufficient specific information about the coaching experience is not provided in a majority of these studies, making it impossible to tell which aspects of the coaching program are most effective. Most surprising is the fact that nearly half of the studies do not include information about the dosage of coaching. When dosage was reported, it was reported using general terms such as "weekly" or "monthly," which makes it impossible to determine the effects of both the duration and intensity of coaching programs on teachers' outcomes.

Consultation. Consultation can be defined as a "collaborative, problem-solving process between an external consultant with specific expertise and adult learning knowledge and skills and an individual or group from one program or organization" (NAEYC & NACCRRA, 2011, p. 12). Typically, the focus of consultation is to work towards resolving concerns using a capacity-building approach that the recipient can continue to use as a result of the consultation process (NAEYC & NACCRRA, 2011). Much like mentoring and coaching, consultation is also a relationship-based approach but to a lesser degree. The process for consultation begins with the development of goals, followed by the consultant providing supports as the receiver implements strategies (NAEYC & NACCRRA, 2011). Consultation is likely to occur on-site, but as recent research indicates, web-based consultancy projects are emerging as an innovative and cost-effective approach to professional development (Kinzie et al., 2006).

MyTeaching Partner (MTP), a web-based consultancy model that incorporates videos of high quality teacher-child interactions related to the Classroom Assessment Scoring System (CLASS), workshop training, and web-mediated consultation, has

shown promise as a method of professional development. A longitudinal study that compared two randomized controlled groups of teachers found that the group receiving training, video-access, and web-mediated consultancy for one year, showed improved scores in teacher-child interactions, compared to the group that only received training and access to videos (Pianta, Mashburn, Downer, Hamre, & Justice, 2008).

Furthermore, children made significant gains in receptive language skills in classrooms where teachers received web-based consultancy (Hamre et al., 2010). A follow-up study examining the implementation fidelity of the professional development within the effective MTP consultancy group ($n = 62$ teachers) over two years found that teachers were more engaged the first year of consultation than the second year (Downer, Locasale-Crouch, Hamre, & Pianta, 2009). The authors suggest that “less may be more” when providing consultancy, which may be an important consideration when determining the duration and intensity of consultation approaches. Another interesting, yet unexpected finding was that older teachers spent more time on the My Teaching Partner website compared to younger teachers. Also teachers with more experience spent less time on the website. These findings have important implications for professional development opportunities, including those related to ELDS, underscoring the need for the use of a variety of methods and professional development strategies that will reach a broad range of diverse adult learners.

Professional Development Related to ELDS

The effective implementation of a standards-based education in a developmentally appropriate manner requires teachers to have a complex understanding of child development and early education. The process of using standards requires teachers to be able to identify where individual children are in relation to specific

indicators articulated in the standards and identify what skills and abilities children need to make progress (Scott-Little et al., 2003). With this knowledge in mind, teachers must be able to provide enriching educational experiences that are appropriate for individual children's developmental level and interests that will foster growth towards the achievement of the specific indicator (Gronlund & James, 2008). Due to the high-complexity of effective implementation of standards, it is clear that additional support and professional development efforts are needed to promote early childhood teachers' knowledge and effective use of ELDS.

The NAEYC and NAECS/SDE position paper related to ELDS (2002) cautions that if early childhood educators and administrators are to gain the knowledge, skills, and dispositions required to effectively use ELDS, there must be a significant expansion of professional development. They assert that in-depth professional development, including technical assistance, must not only target standards, but also target the relationship between standards and appropriate curriculum, teaching strategies, and assessment tools (NAEYC & NAECS/SDE, 2002). The Zero to Three Policy Center further asserts that ELDS should inform every aspect of the professional development system including pre-service and in-service training (Petersen et al., 2008).

Recognizing the complexity of ELDS implementation, states have initiated many professional development efforts to increase early childhood professionals' knowledge and use of ELDS. Unfortunately, one study found that resources used to develop states' ELDS far outmatched resources allocated to the implementation of standards (Scott-Little et al., 2003). When state leaders were asked about training and support for the implementation of standards, the most common responses were notably short-term efforts such as presentations at conferences and workshops (Scott-Little et al., 2003). A

more recent study from 2007 found that 36 states were providing training related to ELDS (or in process of developing training), and 23 states were providing technical assistance to programs (Scott-Little et al., 2007). State representatives cited a number of professional development efforts including train-the-trainer programs, conferences, and in-service trainings. They further indicated that these professional development initiatives were used to help early childhood professionals become familiar with ELDS. Fewer efforts targeted more in-depth understanding of standards such as linking ELDS to curricula and assessment. Approximately half of the states had developed or were in the process of developing professional development opportunities related to using standards with DLL and children with disabilities.

Although there have been numerous efforts at the national and state level to develop ELDS documents, and some efforts by states to engage early childhood professionals in professional development related to ELDS, little is known about the effectiveness of such professional development experiences (Scott-Little et al., 2006). Furthermore, little is known about the extent to which early childhood teachers are using standards in their work with families and children, including those with disabilities and DLL. Lastly, it is important to investigate the types of supports and professional development opportunities that teachers believe will be most effective in helping them understand and effectively use ELDS. By understanding the types of professional development opportunities related to ELDS that are being offered, how teachers are currently using ELDS, as well as identifying additional supports that are needed, states' can be more strategic in how they plan and implement ELDS professional development.

CHAPTER IV

THE CURRENT STUDY

The North Carolina Foundations for Early Learning and Development (North Carolina *Foundations* Task Force, 2013) is North Carolina's current ELDS document. Beginning in 2014, numerous professional development efforts were initiated across North Carolina to prepare early childhood educators to use *Foundations* to enhance their work with children and families.

Purposes of the Study

The current study addressed early childhood professionals' knowledge and use of *Foundations* in two ways: by collecting in-depth data from a targeted sample of preschool teachers and by collecting data from a broader convenience sample of early childhood professionals. The primary purpose of this study was to examine North Carolina preschool teachers' 1) familiarity with and knowledge of the revised *Foundations* (2013); 2) implementation of *Foundations* in their classrooms and with families; 3) use of *Foundations* with children who are dual language learners and children with disabilities; 4) participation in *Foundations* professional development opportunities (i.e., training and technical assistance); 5) and professional development needs for additional support to strengthen their understanding and use of *Foundations*. These areas were examined with data collected from a targeted sample of preschool teachers who had engaged in some form of *Foundations* professional development (i.e., training, technical assistance) within the last year. Additionally, some of these topics

were further explored to examine whether results varied by program sector and/or by the type and amount of professional development teachers' received.

In order to gain a better understanding of the use of *Foundations* among the larger population of the early childhood workforce across North Carolina, a secondary component of the study included a survey that was disseminated broadly among early educators, administrators, and other early childhood professionals. Respondents included teachers and other professionals, who may or may not have engaged in professional development related to *Foundations* within the last year, and also included teachers who work with varying ages of children. Specifically, the goal of this secondary component of the study was to learn about the 1) general familiarity and use of *Foundations*; 2) type and amount of *Foundations* professional development experienced; and 3) barriers to accessing and using *Foundations*.

Research Questions

Specific research questions are listed below. Note that research questions one, two, three, and four were examined as part of the primary component of the study, with a targeted sample of 110 preschool teachers who had participated in some type of professional development related to the revised *Foundations* within the last year. Research question five was explored in the secondary component of the study with a broader population ($n = 117$) that included infant, toddler and preschool teachers, administrators, and other early childhood professionals across North Carolina who may or may not have engaged in professional development related to the revised *Foundations*.

RQ1. What types and amount of professional development opportunities have teachers had in the last year related to the revised *Foundations*? How does teachers'

participation in the different types of professional development opportunities vary by sector (i.e., child care, Head Start, public school, and FCCH)?

RQ2. What have teachers learned from their professional development on *Foundations* and how do they report using *Foundations*? How familiar and knowledgeable are teachers with *Foundations*? How do teachers report they are using *Foundations* with families and children, including dual language learners and children with disabilities?

RQ3. Is the type and amount of *Foundations* professional development related to how prepared teachers feel to use *Foundations*?

RQ3a. Are there differences in teachers' familiarity with and knowledge of *Foundations* associated with the type and/or amount of *Foundations* professional development they have experienced?

RQ3b. Are there differences in how teachers report using *Foundations* associated with the type and/or amount of *Foundations* professional development they have experienced?

RQ4. What types of professional development experiences and other supports do teachers feel they need in order to use *Foundations* effectively?

RQ4a. Are there differences in the professional development needs/supports reported by teachers working in different program sectors?

RQ4b. Are there differences in the professional development needs/supports reported by teachers based on the type of *Foundations* professional development they have experienced?

RQ5. In the general population of early childhood professionals in North Carolina, how familiar are they with *Foundations*, what types and amount of professional

development pertaining to *Foundations* have they experienced, and what are the barriers to accessing and using *Foundations*?

Hypotheses. This descriptive study was designed to capture data regarding the status of professional development efforts in the state. As evidenced by the review of literature, no studies have examined the ways in which teachers are currently using standards in their professional work. Therefore, many of the research questions were exploratory and did not lend themselves to hypotheses. For instance, data examining the types and amount of professional development opportunities teachers have had as well as data related to variations in professional development engagement by sectors, will provide descriptive information that can be used to inform policy-related decisions associated with professional development access and engagement.

There is, however, an extant literature on the effectiveness of professional development, although no studies have specifically examined the effectiveness of professional development related to ELDS. Therefore, specific hypotheses were extrapolated from this body of research and applied to research questions 3a and 3b. It was hypothesized that teachers who had participated in technical assistance/coaching in addition to training would demonstrate more familiarity with and knowledge of *Foundations* (3a), as well as report they used *Foundations* to a greater degree (3b) than teachers who had only participated in training. It was also hypothesized that hours of training would be positively associated with teachers' familiarity and knowledge of *Foundations* (3a) and reported use of *Foundations* (3b).

CHAPTER V

METHODOLOGY

The aim of the current study was to provide insight into preschool teachers' knowledge, use and needs related to *Foundations* by collecting in-depth data with a targeted sample using a paper-and-pencil survey. Interview data and document reviews were also completed with nine preschool teachers from this sample to provide rich details and evidences related to *Foundations* use and supports. These data (survey and interview) were collected as part of the primary component of the study. Additionally, the study examined early childhood professionals' knowledge and use of *Foundations* with a broader sample using a short electronic survey, which was part of the secondary component of the study. This chapter begins with a brief overview of community-engaged research followed by a description of community engagement in the current study. The remainder of the chapter is organized by the two components of the research study. First, a description of the sample, measures, procedures for recruitment/data collection, and analyses for the primary component will be provided, followed by the secondary component.

Community-Engaged Research Approach

A defining feature of this study was the use of a community-engaged research approach (see Figure 1). Community-engaged research involves the collaboration between researchers, community members, and organizational representatives in aspects of the research process where partners contribute their expertise and share in decision-making and ownership (Israel, Schulz, Parker, & Becker, 1998). An important

goal of community-engaged research is to increase the knowledge and understanding of a given phenomenon and integrate the knowledge gained with interventions and policy changes that improve the community or population studied (Goodson & Phillimore, 2010). The activities and ways the current study incorporated a community-engaged research approach are described in this section.

For the purpose of this study, it was important to have input from individuals who were supporting the use of *Foundations* in various early childhood settings. Thus, a Community Research Design and Implementation Team (CRDIT) was formed with representatives from the North Carolina Early Learning Network located at the Frank Porter Graham Child Development Institute, the Division of Child Development and Early Education (DCDEE), Child Care Resources Inc., Migrant and Seasonal Head Start, and a child care program in North Carolina. These individuals were either involved with professional development efforts across North Carolina related to *Foundations*, had various content area expertise that was needed to address specific aspects of the study, and/or were representatives of the target audiences for the professional development.

In May 2014, my advisor, Dr. Scott-Little, and I developed a list of individuals who either had knowledge and expertise regarding professional development pertaining to *Foundations* and/or content area expertise related to topics such as dual language learning and disabilities. Initial contact was made via email with potential committee members, who either agreed to be part of the committee or recommended another person in their program/organization to be on the CRDIT.

After the CRDIT was formed, they participated in a conference call in June 2014. The purpose of the call was to provide information about the study, learn about the different *Foundations* professional development initiatives that were occurring across the

state, and gather input on how the study could address questions that are relevant to the stakeholders on the CRDIT. Following this call, drafts of the survey and interview questions were sent to the CRDIT to get individualized feedback on the content and types of questions that were being asked. The CRDIT raised three major issues/concerns. First, members were interested in learning more about challenges teachers face in accessing and using *Foundations*. Therefore, new questions were added to the survey that addressed challenges/barriers. Secondly, members wanted to know more about the ways teachers use *Foundations* for activities such as lesson planning. A specific question related to the use of *Foundations* when developing lesson plans was added to the survey and interview protocol. Lesson plans were also added as a document to be collected/reviewed during the interview. Lastly, committee members were interested in understanding the ways teachers use *Foundations* with families. An entire section on implementing *Foundations* with families as well as providing families with the *Foundations* companion document was added to the survey. In addition to these major changes, the CRDIT also shared several minor revisions/suggestions. Their feedback on the survey and interview protocol was used to make revisions prior to the survey being piloted with 10 teachers in June and July 2014.

A second conference call took place in September 2014 to discuss reflections from the pilot study, issues regarding recruitment, and updates on *Foundations* professional development. There were two significant ways in which CRDIT input led to significant changes to the research study at this point: recruitment strategies were refined and the secondary component of the study was added. Issues related to recruitment were the most challenging part of the pilot study, so the CRDIT helped develop specific plans and strategies to improve recruitment efforts. Secondly, based on

discussions related to the objective/focus of the study, a priority emerged that had not been addressed in the research questions. Specifically, community members were interested in not only surveying teachers who had received professional development related to *Foundations*, but they were also interested in collecting data from the larger community of early childhood professionals. Based on community members' input, the secondary component of the study was designed, which included one exploratory research question to address the general population of early childhood professionals' experiences and professional development participation/needs related to *Foundations*.

In November and December 2014, individualized follow-up phone calls were held with four members of the CRDIT to ask specific questions related to issues around recruitment plans and/or content-specific questions about the survey. Three CRDIT members who work for agencies/programs that provide professional development related to *Foundations* assisted in developing detailed recruitment plans. The fourth committee member is an expert on dual language learning, so she was able to provide feedback on the section of the survey that addressed teachers' implementation of *Foundations* with dual language learners.

In January 2016, CRDIT members were invited to participate in a two-hour virtual meeting to discuss the results of the study, develop recommendations based on the results, and make tentative plans for disseminating findings. Two CRDIT members participated in this meeting. Results related to each of the research questions were shared followed by rich discussions about possible explanations for the results and recommendations that could increase teachers' access to professional development and use of *Foundations*. In Chapter VII, the Discussion, explanations and recommendations made by the CRDIT will be highlighted in more detail.

Lastly, plans for dissemination were discussed during the CRDIT meeting. General dissemination plans included sharing results from the study through several outlets including state and national conferences such as the National Association for the Education of Young Children's annual Professional Development Institute, The National Smart Start Conference, and the North Carolina Association for the Education of Young Children Conference. CRDIT members were invited to co-present on these presentations. Findings from this study will also be shared in a manuscript submitted to an early childhood journal as well as a popular press article submitted to a publication such as *Young Children* or *Milestones* (published by NCAEYC). In the future, CRDIT members will be invited to co-author these publications. Additionally, CRDIT members requested a summarized research brief that could be shared with their agencies. In summary, the CRDIT made many contributions to this research study, and they will continue to be an important part of the dissemination efforts.

Research Design

The current descriptive study used a mixed methods design, which is a procedure for collecting and analyzing both quantitative and qualitative data at some stage of the research process within a single study to understand a research problem more completely. The rationale for using this methods design was that neither quantitative nor qualitative methods were sufficient by themselves to capture the trends and details related to teachers' understanding and implementation of *Foundations*. When used in combination, quantitative and qualitative methods complemented each other and allowed for more complete analysis.

The methodology that was used in the study will be described in two parts as it relates to the primary and secondary components of the study. The first section

describes the methods for the primary component of the study that includes a targeted sample of preschool teachers who have engaged in some type of professional development related to the revised *Foundations*. Descriptions of the professional development classification system, sample, measures, procedures for recruitment/data collection, and data analysis plan related to the primary component of the study are described first. Next, the methodology used to address the secondary component of the study, with a general sample of early childhood professionals across the state is described.

Primary Component

One of the goals of this study was to better understand the types and amount of training and technical assistance teachers have engaged in across the state. It was expected that teachers would have likely participated in a variety of professional development, ranging from informal site-level professional development to formal professional development opportunities. In order to ensure that teachers who had participated in each of the three types of formal professional development that are the focus of study, the research team operationalized three categories of professional development that are of prime interest: two types of training (1) one-time trainings/workshops and (2) ongoing training series) and technical assistance/coaching. It was assumed that participants would have participated in more than one of these types of professional development and may have received other types of professional development and support. Therefore, the recruitment and sampling strategies were designed to maximize the likelihood that the sample included individuals who had participated in these three types of professional development. Descriptive analyses were conducted to determine the amount and types of professional development teachers had

received, however, analyses comparing specific types of professional development were limited to these three categories (one-time training/workshops, on-going training series, and technical assistance/coaching). Before sample characteristics are described, the professional development classification system will be further explained.

Professional Development Classification System

Teachers' responses on the survey were used to classify them into three sub-groups of professional development type: 1) one-time training/workshops, 2) ongoing training series, and 3) technical assistance/coaching. The selection procedures for different types of professional development groups include the following.

Teachers who had only participated in a one-time training or workshop (i.e., no participation in the ongoing training series or technical assistance/coaching specifically from the Early Educator Support, Licensure and Professional Development (EESLPD) program) were classified as the ***one-time training/workshop group***. Teachers who had participated in an ongoing training series were classified into the ***ongoing training series group***. This group also included teachers who had participated in a one-time training/workshop in addition to participation in the ongoing training series, but does not include teachers who have had technical assistance/coaching from the NC Pre-K EESLPD Office. Teachers that reported technical assistance/coaching from the EESLPD Office were automatically classified into the ***technical assistance/coaching group*** regardless of the type of training they had experienced.

Targeted Sample for Survey

To address the primary purpose of the study, a stratified purposeful sampling technique was used to recruit 110 teachers working with children between the ages of 3 and 5 years, who had participated in training (i.e., one-time training/workshops and

ongoing training series) and technical assistance/coaching that were the focus of the study. Using a stratified purposeful sampling design ensured that each of these types of professional development was represented within the sample. This sampling strategy enabled the researchers to explore characteristics of particular subgroups who have participated in different types and amounts of professional development and facilitated exploratory analyses to describe teachers' responses by type and amount of professional development they had experienced, which was the aim of research questions three and four. The professional development categories, examples of the types of professional development teachers may have completed for each category, and sample sizes are provided in Table 1.

Survey sample. As shown in Table 2, majority of teachers (70.9%) had a bachelor's degree and most of the remaining teachers had a graduate or associate's degree (15.5% and 10.0% respectively). Most teachers indicated their degree was in Birth – Kindergarten (60.0%) or early childhood education (22.7%). A smaller number of teachers had degrees in related fields such as child development or psychology (10.0%). Two-thirds of teachers had a Birth – Kindergarten teaching license (66.4%), a quarter of teachers (24.5%) had no license, and the remaining teachers (9.1%) had “other” teaching licenses such as Kindergarten – 6th grade and Art (K – 12th grade). Over half of teachers were working in child care (55.5%), almost a third were working in public schools (30.9%), and fewer teachers were working in Head Start programs or family child care homes (12.7% and 1.0% respectively). Almost three-fourths (73.6%) of teachers indicated they were NC Pre-K teachers and approximately a third were being served through the NC Pre-K EESLPD Office (34.5%). On average, teachers had been working with young children 12.38 years ($SD = 7.30$; Range = 41)

All teachers indicated they were familiar with the revised *Foundations* (2013) and they were currently using the revised *Foundations*. In addition to the revised *Foundations*, a small percentage (12.7) of teachers also indicated they were still using the original *Foundations for Preschoolers* (North Carolina Department of Public Instruction [NCDPI], 2005). Over half of teachers received their copy of the revised *Foundations* from an administrator (55.5%) with a smaller number of teachers receiving their copy at a training/workshop (12.7%), via online website (5.5%), outside agency (e.g., Smart Start, CCR&R; 4.5%), EESLPD Office (2.7%), or course taken in an IHE (1.8%). A small percentage of teachers (7.3%) indicated copies of *Foundations* were mailed to their center. It is possible that this group of teachers and the teachers who reported that they received their copy of *Foundations* from an administrator overlap. Copies of *Foundations* were mailed out to early childhood programs across the state from the Division of Child Development and Early Education (DCDEE). Program administrator(s) likely distributed these mailed copies to teachers, thus teachers may have reported that they received their copy from an administrator or that a copy was mailed to their center.

Interview sample. To further explore preschool teachers' experiences with *Foundations*, qualitative interviews were completed with a sub-set of nine teachers who completed the survey and indicated they had participated in one of the professional development opportunities. The selection of teachers for interviews was based on two criteria: 1) self-reported proficiency with *Foundations*, and 2) type of professional development they had experienced. These two selection criteria as well as the interview selection process are described in the following section.

Proficiency with Foundations. In the survey, teachers self-selected into one of three profiles based on their perceived proficiency with *Foundations*. The three proficiency profiles included: 1) novice (i.e., teachers with limited experience using *Foundations*, 2) intermediate (i.e., teachers who have some experience using *Foundations* in the classroom), and 3) proficient (i.e., teachers with advanced understanding of *Foundations* and who use it regularly in their classrooms).

Type of professional development. Using the professional development classification system described above, teachers were classified into one of the three professional development types: 1) one-time training/workshop, 2) ongoing training series, and 3) technical assistance/coaching.

Interview selection process. The selection of interview participants was a multi-step process. The first step was to identify all the teachers who noted on the paper survey that they were willing to be interviewed as part of the study. Next, based on teachers' self-reported perception of proficiency (i.e., novice, intermediate, proficient) and type of professional development they experienced (i.e., one-time training/workshop, ongoing training series, and technical assistance/coaching), teachers were organized into a 3 X 3 matrix. This created nine groups of teachers that included: 1) beginner + one-time training/workshop, 2) beginner + ongoing training series, 3) beginner + technical assistance/coaching, 4) intermediate + one-time training/workshop, 5) intermediate + ongoing training series, 6) intermediate + technical assistance/coaching, 7) proficient + one-time training/workshop, 8) proficient + ongoing training series, and 9) proficient + technical assistance/coaching. One teacher from each of these groups was randomly selected for an interview, with the exception of a teacher from the beginner + ongoing training series group. There were no teachers in the

ongoing training series group who self-identified as a beginner (i.e., limited experience with *Foundations*), therefore, two teachers were selected from the proficient + ongoing training series group.

In the remainder of this section, a detailed description of each of the interviewees who fit these nine profiles will be provided:

Olivia (beginner + one-time training/workshop). Olivia was a NC Pre-K teacher working at a child care center in an urban area in central NC. She had a bachelor's degree in a related field and she was not receiving services from the EESLPD office. She had been working in child care for approximately three years and during that time she had worked with dual language learners, but not children with disabilities. On average, she received 25 hours of professional development a year and she had recently participated in the one-time *Foundations* training offered by her local CCR&R agency (five-hour training). She described herself as a beginner at using *Foundations*, which indicated that she had limited experience.

Anne (beginner + technical assistance/coaching). Anne was a NC Pre-K teacher working at a large child care program in an urban area in central NC. She had a bachelor's degree and teaching license in elementary education (Kindergarten – 6th Grade). She was working to complete her B-K license and had only just begun receiving services from the EESLPD office. At the time of her interview, she had only been working as an early childhood teacher for two years. During that time, she had worked with dual language learners, but not children with disabilities. Anne said she received “countless” hours of professional development each year and she had received five hours of training specifically on *Foundations* from her local CCR&R agency. She self-identified as a beginner, which meant she had limited knowledge of *Foundations*.

Rondell (intermediate + one-time training/workshop). Rondell was a preschool teacher working at a child care program in an urban area in central NC. She had an associate's degree in early childhood education and had been working as an early childhood teacher for 17 years. In the past two years she had worked with DLL, but not children with disabilities. On average, she received 10 hours of professional development each year. She had participated in the five-hour *Foundations* training offered by her local CCR&R agency. Although Rondell identified herself as being an intermediate teacher at using *Foundations*, her responses were more in line with a beginner teacher with limited experience with *Foundations*.

Ranae (intermediate + ongoing training series). Ranae worked as an NC Pre-K teacher in a public school in a rural farming town in central NC. She had a bachelor's degree in early childhood education and a Birth – Kindergarten teaching license. She had been working as an early childhood teacher for four years and she worked with children with disabilities and DLL. On average she received 30 hours of professional development each year and had approximately 20 hours of training on *Foundations*. This training included all seven modules of the ongoing-training series that was provided by the public school system. Ranae described herself as an intermediate teacher, who only used *Foundations* “a little,” but she was very eager to learn.

Nina (intermediate + technical assistance/coaching). Nina was a NC Pre-K teacher at a child care center in a rural mountain town in western NC. She had a bachelor's degree in elementary education and a dual teaching license in Birth – Kindergarten and Kindergarten – 6th Grade. She had been receiving services from the EESLPD office for three years and had been teaching in early childhood education for four years. Nina had participated in all modules of the ongoing seven-module training

that was offered through her local public school system. On average, Nina received 60+ hours of professional development each year and she had received approximately nine hours of training on *Foundations*. She identified herself as an intermediate teacher, who only used *Foundations* “a little” in her classroom. Although Nina self-identified as an “intermediate” teacher when it came to using *Foundations* she knew a great deal more about *Foundations* than many teachers who self-identified as being proficient. She also used *Foundations* a great deal in her classroom, which served children with disabilities and dual language learners.

Gail (proficient + one-time training/workshop). Gail was an NC Pre-K teacher working at a developmental day program in a rural part of central NC. She had a bachelor’s degree in early childhood education and a Birth – Kindergarten teaching license. She had over 22 years of experience and she worked a great deal with children with disabilities as well as dual language learners. On average, she received 20 hours of professional development each year. She had participated in a six-hour *Foundations* training (one-time training) that she described as a “train-the-trainer” session. Gail described herself as being proficient at using *Foundations*, and she had an extensive amount of expertise in using *Foundations* with children with disabilities.

Donna (proficient + ongoing training series). Donna was a NC Pre-K teacher in a public school in rural, central NC. She had a bachelor’s degree in early childhood education and a Birth – Kindergarten teaching license. Donna had worked in early childhood education for ten years and frequently worked with children with disabilities and DLL. On average, she received approximately 30 hours of professional development each year. Donna had participated in all seven modules of the ongoing training series (approximately 28 hours of training) that was offered through her public school system.

She described herself as being proficient at using *Foundations*. Donna was very enthusiastic about *Foundations* and she was excited to talk about all the many ways she used *Foundations* in her classroom.

Amy (proficient + ongoing training series). Amy worked in a small mountain town in NC as a NC Pre-K teacher at a child care center. She had a bachelor's degree in early childhood education and a Birth – Kindergarten teaching license. She had been working in early childhood education for 12 years. Most of her teaching experience was with older preschoolers (four and five year olds), but she had recently begun working with three year olds. She was excited about this change in her position and she was adjusting to working with younger children. She had worked with children with disabilities, but not DLL in the past two years. She typically received 40+ hours of professional development each year and she had participated in approximately 20 hours of training on *Foundations* through the public school system (all seven modules of the on-going training series). Amy described herself as being a proficient user of *Foundations*.

Leah (proficient + technical assistance/coaching). Leah was a NC Pre-K teacher at a child care center located in a rural area on the coast on NC. She had a bachelor's degree in early childhood education and a Birth – Kindergarten teaching license. She had been receiving services from the EESLPD office for two years and had been working in early childhood education for ten years. She had worked with children with disabilities as well as DLL in the past two years. On average she received approximately ten hours of professional development each year and she had participated in a six-hour *Foundations* training facilitated by her local CCR&R agency. Leah described herself as being proficient at using *Foundations*.

Measures

The measures used to collect data for the primary component of the study included a survey and an interview protocol. A description of the measure development process and final instruments for both the survey and interview protocol are described below.

Survey. The Early Learning Standards Survey Instrument for Early Childhood Educators was developed and piloted with ten early childhood educators in North Carolina in May, June, and July of 2014. Based on the results of the pilot study, the survey was revised. The survey was also reviewed twice by the CRDIT and revisions were made. Furthermore, the section of the survey examining teachers' knowledge of *Foundations* was piloted with 21 students in an introductory course related to teaching in early care and education programs. Items examining knowledge related to *Foundations* were revised based on results and students' feedback. The final version of the survey (see Appendix B) included seven sections that consisted of a combination of open- and closed-ended questions (e.g., Likert items, true and false questions). The format of the survey was paper-and-pencil and it took approximately 20–25 minutes to complete. Sections one, two, five, six, and seven were not combined into scales, because these sections provided descriptive data about teachers' background, *Foundations* support, use of *Foundations* when working with children with disabilities and dual language learners, and professional development needs. Sections three and four, which included items related to teachers' knowledge and familiarity with *Foundations* and use of *Foundations*, were combined into scales and subscales that were used for exploratory analyses. Specific information about each of the seven sections of the survey is provided below.

Section one: Background information. This section consisted of 13 questions that related to teachers' current position, place of employment, education level, and years of experience. In this section, teachers were also asked to identify which version(s) of *Foundations* they were familiar with and which version(s) they used in their classroom. Lastly, teachers were asked to identify if they had a copy of *Foundations*, and if so, where did they obtain their copy.

Section two: Foundations support. This section of the survey included six items related to the types and amount (number of hours) of *Foundations* trainings teachers had received as well as types of support and technical assistance they had been provided. This section also included one open-ended question that asked teachers to identify their greatest support in helping them to understand and use *Foundations*.

Section three: Foundations knowledge and familiarity. The descriptions for section three will be broken up into two parts: 1) knowledge of *Foundations* and 2) familiarity with *Foundations*. Each of these sections will be described in detail, including the development of scales and subscales, which were used for exploratory analyses in research question 3a.

The *Knowledge of Foundations* scale consisted of 28 items related teachers' general knowledge of *Foundations*. These items related to teachers' knowledge of age groups (eight items), knowledge of domains (ten items), and general knowledge (ten items). All items were coded as "correct" or "incorrect". The psychometric properties (i.e., mean, standard deviation, skewness, kurtosis, and range) of all items were examined and based on this review two items were deleted because they were highly skewed (skewness for item f = 3.82; skewness for item i = 5.88). The resulting 26-item scale had a Kuder Richardson coefficient of reliability (K-R 20) of 0.84, which indicated acceptable

reliability. The K-R-20 was conducted because it can be used to examine the internal consistency of measurements with dichotomous choice (Cortina, 1993). Lastly, an exploratory factor analysis was conducted to determine if there were subscales within the *Knowledge of Foundations* scale. The factor loading scores were low (< 0.52) on the eight components identified in the factor analysis that had an eigenvalue greater than one, so no independent factors were retained. Thus, an overall summary score of the *Knowledge of Foundations* scale was created by adding the total number of correct responses for all 26 items.

On the *Familiarity with Foundations scale*, teachers were asked to rate their familiarity with 14 items related to *Foundations* on a five-point scale (1 = not at all familiar, 5 = extremely familiar). These items included familiarity with the goals and developmental indicators related to specific age groupings (5 items), information related to working with dual language learners and children with disabilities (2 items), goals and indicators within specific domains of learning (5 items), and strategies for teaching specific age groups (2 items). Mean scores on the *Familiarity with Foundations* scale had excellent reliability ($\alpha = 0.94$), so no items were deleted.

An exploratory factor analysis was conducted and it was determined that there were three factors within the *Familiarity with Foundations* scale. Six items loaded onto factor one, with factor loadings ranging from 0.66 and 0.96. Factor one explained 47% of the total variance. After a close inspection of the items, it was determined that these items related to teachers' familiarity with *Foundations* information that specifically related to working with preschool-age children. Therefore, the subscale was labeled the *Familiarity with Foundations Information Related to Preschoolers* and it included the averaged responses for six items. This subscale had excellent reliability ($\alpha = 0.94$). Four

items loaded onto factor two, with factor loadings ranging from 0.69 to 0.92. This factor explained approximately 23% of the total variance and it was concluded that these four items related to teachers' familiarity with *Foundations* information related to working with infants and toddlers. Thus, the subscale was labeled the *Familiarity with Foundations Information Related to Infants and Toddlers*, which included averaged responses for four items. This scale also had excellent reliability ($\alpha = 0.90$). The last two items loaded onto third factor, with factor loadings of 0.82 and 0.84, and they explained approximately 15% of the total variance. These items related to teachers' familiarity with *Foundations* information related to working with children with special circumstances including children with disabilities and children who are dual language learners. Therefore, the averaged responses for the remaining two items were included in the *Familiarity with Foundations Information Related to Working with Children with Special Circumstances* subscale, which also had good reliability ($\alpha = 0.89$).

Section four: Foundations implementation. This section of the survey included questions related to using *Foundations* for lesson planning and other general uses for *Foundations* in the classroom. There were 11 items from this section of the survey that were used in the *General Implementation of Foundations scale*. Teachers rated how often they used *Foundations* for 11 different purposes on a five-point scale (1 = not at all, 5 = always). The scale had excellent reliability $\alpha = 0.96$. An exploratory factor analysis was conducted to determine if there were subscales within the *General Implementation of Foundations scale*. Only one factor was identified as having an eigenvalue greater than one and this factor explained 74% of the total variance. Factor loadings for the eleven items ranged from 0.78 to 0.90. Thus a mean composite score

was created for the *General Implementation of Foundations* scale. This scale was specifically used for exploratory analyses for research question 3b.

Section four of the survey also included other items that examined the ways in which teachers reported using *Foundations* with families. Teachers rated on a five-point scale (1 = not at all, 5 = always) how often they used *Foundations* with families for six different purposes (e.g., share knowledge about their child's development, share activities with families to support their child's development, etc.). These items were analyzed individually to provide descriptive data related to teachers' use of *Foundations* with families. Therefore, reliability analyses and factor analyses were not conducted. Lastly, this section of the survey asked teachers to indicate whether they were familiar with *Foundations with Families* (2013) and ways in which they distributed this resource to families.

Section five: Implementation of Foundations with children who are dual language learners (DLL). The first question in this section asked teachers to indicate whether or not they had worked with children who are DLL in the past two years. Teachers who selected "yes," were asked to complete the remaining questions in section five. Teachers who selected "no" were instructed to skip to section six. Question two asked teachers to report on a 5-point scale (1 = *not at all*, 5 = *always*) how often they referred to *Foundations* when working with children who are DLL for six different purposes (e.g., learn about children who are DLL, adapt activities for children who are DLL, etc.). The last item was open-ended and it asked teachers to identify any additional ways they referred to *Foundations* when working with children who are DLL.

Section six: Implementation of Foundations with children with disabilities.

The first question in this section asked teachers to indicate whether or not they had

worked with children with disabilities in the past two years. Teachers who selected “yes,” were asked to complete the remaining questions in section six. If teachers selected “no,” they were instructed to skip to section seven. Question two asked teachers to report on a five-point scale (1 = *not at all*, 5 = *always*) how often they referred to *Foundations* when working with children with disabilities for seven different purposes (e.g., set goals or help in writing IEPs, adapt activities, etc.). The last item was open-ended and it asked teachers to identify any additional ways they referred to *Foundations* when working with children with disabilities.

Section seven: *Foundations* professional development needs. The final section of the survey began with two questions that asked teachers to rate on a five-point scale (1 = not at all, 5 = very much) the extent to which they believed they would benefit from additional support or guidance to understand and use *Foundations* and how receptive they were to receiving additional professional development. Next, teachers were asked to rate on a five-point scale (1 = not at all, 5 = very much) how much they would benefit from various professional development supports (seven items), resources and print materials (eight items), and other miscellaneous supports (two items). These items were analyzed individually to provide descriptive data related to teachers’ professional development needs. In an open-ended question, teachers were asked to report any additional supports that would help them to use *Foundations* in their classrooms. Next, teachers were asked to rate on a 5-point scale (1= *not at all*, 5 = *very much*) how much specific barriers/challenges (e.g., lack of support from administrator, lack of available professional development, etc.) prevented them from using *Foundations* in their classroom (9 items). These items were also analyzed individually, therefore reliability analyses and factor analyses were not conducted. Lastly, teachers were asked

in an open-ended question to identify any additional barriers/challenges that prevented them from using *Foundations*.

Interview protocol. The purpose of the interview was to address research questions one, two and four, to explore the types of professional development teachers have received, how teachers are using *Foundations*, and the types of supports teachers feel they need in order to use *Foundations* more effectively. The interview protocol was developed and then reviewed by the CRDIT. Based on their feedback, minor revisions to the interview protocol were made. The final version of the Interview protocol (see Appendix C) included two types of data collection: interviews and document review.

The interview portion of the protocol included asking teachers ten open-ended questions related to how teachers used *Foundations* in their everyday work in the classroom, experiences with professional development related to *Foundations*, as well as challenges they experienced when trying to use *Foundations*. Follow-up questions and prompts were used to promote elaboration and clarification when needed. The second portion of the protocol was the collection and review of documents related to *Foundations*. Examples of documents included but were not limited to lesson plans that incorporated *Foundations* as well as family resources related to *Foundations* such as newsletters and activities. These evidences were reviewed and examined to see how teachers were using *Foundations* in their classrooms and with families.

Procedures for Recruitment and Data Collection

Participants were recruited using a variety of strategies including referrals from agencies providing training on *Foundations*. Three members from the CRDIT serve in lead roles in different agencies providing professional development and they provided assistance with recruitment. The following section includes recruitment and data

collection strategies for the one-time training/workshop, ongoing training series, technical assistance/coaching, and interview groups.

One-time training/workshop. Recruitment of participants in the one-time training/workshop group targeted specific one-time training sessions across the state. One of the one-time training initiatives targeted was a conference titled *It Starts with Us: Solid Foundations, Successful Futures* that took place in March 2015 in Charlotte, NC. A table was set up at the conference where participants could go to learn about the study and sign up to participate during breaks between sessions and lunch. Surveys were dropped off or mailed to interested participants approximately one month after the conference to give caregivers the opportunity to go back to their centers/schools and begin using *Foundations*. Completed surveys were either mailed to or picked up by researchers. Another one-time training initiative targeted for recruitment was the standardized *Foundations* training offered through the Child Care Resource and Referral (CCR&R) network. Referrals of individuals and/or centers/programs that took part in these trainings were provided by key informants. Center/program administrators were contacted by phone and information about study was provided. When approved by administrators, surveys were mailed or dropped off at the center/program for teachers to complete. Program/center administrators collected completed surveys, and complied surveys were either mailed to or picked up by researchers.

On-going training series. The on-going training initiative was a 7-module training series developed by the NC Early Learning Network at the Frank Porter Graham Child Development Institute in collaboration with the Department of Public Instruction (DPI) titled, *Effective Teacher Practices Supporting NC Foundations for Early Learning and Development*. Key informants that oversee this training initiative made referrals of

individuals and/or centers/programs who took part in the training series. Phone calls were made to centers/programs to provide information about the study and ask for their participation. When approved by administrators, recruitment flyers were shared with teachers. Surveys were mailed or dropped off at the center/program. After surveys were completed, program/center administrators collected them and they were either mailed to or picked up by researchers.

Technical assistance/coaching participants. A member of the CRDIT provided contact information for regional coordinators and other individuals involved in the NC Pre-K EESLPD Office. These individuals provided a list of teachers who were receiving technical assistance/coaching and had also received some type of training related to *Foundations*. As part of their coaching, these participants attended Professional Learning Community (PLC) meetings. PLC coordinators were contacted to schedule a date to recruit teachers at a PLC meeting. When permitted by the PLC coordinator, the survey was distributed and collected at the PLC meeting. If time did not permit, surveys were distributed to teachers for them to complete on their own time and mail to researchers.

Interview participants. Selected teachers were contacted by telephone to participate in the interview portion of the study. Dates for the interviews were scheduled at the teacher's convenience and took place at the child care center/school where she was employed. Interviews took approximately 30 minutes and they were completed in a quiet place at the center/school. During the interview, teachers were asked a series of questions from the protocol (see Appendix C). Additional prompts were provided when necessary. All interviews were digitally recorded. After the interview portion was

complete, teachers were asked to provide evidences that demonstrated their use of *Foundations*. Evidences were either be photocopied or photographed.

Incentives. Teachers were provided with incentives for both completing surveys and for participation in interviews. All teachers who completed the paper survey received a \$10.00 gift card and were entered into a drawing to win a \$50 gift card. Additionally, the nine teachers who participated in interviews were given a \$50 gift card.

Data Analysis Plan

Data from the surveys were manually entered into PASW software for analysis. The first step of the data analysis plan was to “clean” the data and check the accuracy by running frequencies for all items. The primary component of the current study was organized around four research questions and specific analyses for each of these questions are further described. Since most analyses for this study are descriptive, the strategy for creating the variables and then the descriptive analyses conducted on the variables are described for RQ1 and RQ2. Additional analyses conducted with the variables are described under RQ3. The last part of this section focuses on the data analysis plan for interviews and the document review.

RQ1. What types and amount of professional development opportunities have teachers had in the last year related to the revised *Foundations*? How does teachers’ participation in the different types of professional development opportunities vary by sector (i.e., child care, Head Start, public school, and FCCH)?

RQ1 analyses. The analysis related to training will be described first, followed by analysis for technical assistance and data analysis by sector. For individual teachers, the total number of trainings reported was computed, along with the mean, standard deviation and range for the total sample. The number of teachers who have participated

in each type of training (i.e., conference/workshop, CCR&R 0.5 CEU training, DPI 7-module training series, in-service training at center/program level, other) was also computed. Additionally, the mean, standard deviation and range was calculated based on the total number of hours of training teachers' reported. Data related to technical assistance was analyzed in two ways. First, the number of types of technical assistance each individual teacher reported was calculated along with the mean, standard deviation, and range for the sample. Next, the number of teachers who reported each type of technical assistance (i.e., coaching from supervisor, mentoring with teacher, coaching from NC Pre-K EESLPD Office, and technical assistance from Smart Start or CCR&R agency) was calculated. Lastly, the number of teachers from different types of programs/service sectors (child care, pre-K, Head Start, public school, and FCCH) that participated in each type of professional development was calculated.

RQ2. What have teachers learned from their professional development on *Foundations* and how do they report using *Foundations*? How familiar and knowledgeable are teachers with *Foundations*? How do teachers report they are using *Foundations* with families and children, including dual language learners and children with disabilities?

RQ2 analyses. Data analyses related teachers' familiarity and knowledge of *Foundations* will be described first, followed by teachers' use of *Foundations* with all children, families, children who are DLLs, and children with disabilities. Descriptive statistics and an over-all score on the *Familiarity with Foundations* scale was calculated as well as descriptive statistics and sub-scores for the three factors identified in the factor analysis (i.e., *Familiarity with Foundations Information Related to Preschoolers*, *Familiarity with Foundations Information Related to Infants and Toddlers*, and *Familiarity*

with Foundations Information Related to Working with Children with Special Circumstances). Detailed information about the familiarity scale and sub-scales can be found in the description of the measures on pages 77-78.

Three areas/topics related to teachers' knowledge of *Foundations* were addressed: 1) knowledge of age groups (eight items), 2) knowledge of domains (10 items), and 3) general knowledge (eight items). The mean number of correct responses as well as the standard deviation and range was calculated for these three areas/topics. Additionally, all the items for the three sections of the *Knowledge of Foundations* scale were combined and preliminary analyses indicated the scale was reliable. Thus, descriptive statistics for teachers' scores on the *Knowledge of Foundations* scale was computed. Detailed information about this scale can be found in the description of the measures on page 76-77.

The next description of analyses relates to how teachers reported using *Foundations* for general purposes in the classroom. The first two questions in this section of the survey addressed how often teachers created and used lesson plans. The number of teachers that selected each response (i.e., daily, weekly, twice monthly, and never) were computed. The third question asked teachers to report how often they used *Foundations* to create lesson plans. The number of teachers that selected each response (i.e., always, almost always, sometimes, rarely, never, and I don't create lesson plans) was calculated. Additionally, teachers rated on a five-point rating scale how often they used *Foundations* for 11 different activities/tasks in the classroom. These data were examined in several ways. First, the mean, standard deviation, and range for individual items were calculated to see which items were rated the highest and lowest. Next, open-ended responses from the survey that related to other ways teachers' used

Foundations were examined to identify commonalities. Lastly, the 11 items on the *General Implementation of Foundations* scale were combined and preliminary analyses indicated that the scale was reliable (see pg. 67 for more information about this scale). Thus, teachers' responses about how important (i.e., not at all, a little, somewhat, a lot, very important) it was to use *Foundations* in their work was treated as a continuous variable, and descriptive statistics were computed.

The study also examined the ways in which teachers reported using *Foundations* with families for six specific purposes. The mean, standard deviation, and range for individual items were examined to see which items were rated the highest and lowest. Open-ended responses from the survey that related to other ways teachers' used *Foundations* with families were examined to identify potential themes. Next, teachers' responses about how important (i.e., not at all, a little, somewhat, a lot, very important) it is to use *Foundations* in their work with families was treated as a continuous variable, and descriptive statistics (i.e., mean, standard deviation, range) were computed. The last set of analyses relate to a document titled *Foundations with Families*, a supplemental resource for families. The number of teachers who reported they have heard of *Foundations with Families* was computed as well as the number of teachers who provide this resource to families. Lastly, the ways teachers provide this resource to families (e.g., home visits, parent orientation, open house, etc.) was examined by calculating the total number of teachers who indicated each way they provided the guide to families.

The study also examined how teachers use *Foundations* in their work with children who are dual language learners (DLL). The data were examined to identify teachers working with dual language learners. Only teachers who reported working with DLL were included in all subsequent analyses related to DLL. On a five-point scale,

teachers rated how often they used *Foundations* when working with DLL for six items (e.g., adapt activities for DLL, set goals for DLL, talk with families about DLL, etc.). These data were examined in two ways. First, the mean, standard deviation, and range for individual items were examined to see which items were rated the highest and lowest. For individual teachers, the total number of ways they reported using *Foundations* with DLL was computed, along with the mean, standard deviation and range for this variable. Open-ended responses that related to other ways teachers' used *Foundations* with DLL was examined to identify commonalities.

In order to investigate the ways in which teachers use *Foundations* in their work with children with disabilities, data were examined to identify teachers working with children with disabilities. This subgroup of teachers was included in all subsequent analyses related to working with children with disabilities. Teachers rated on a five-point scale how often they use *Foundations* when working with children with disabilities for seven items (e.g., set goals or help in writing IEPs, adapt activities, select appropriate materials, etc.). These data were examined in multiple ways. In order to examine individual items, the mean, standard deviation, and range was computed. For individual teachers, the total number of ways they reported using *Foundations* with children with disabilities was calculated, along with the mean, standard deviation and range for the sample. Open-ended responses that relate to other ways teachers' use *Foundations* with children with disabilities were examined to identify potential themes.

RQ3. Is the type and amount of *Foundations* professional development related to how prepared teachers feel to use *Foundations*?

RQ3 analyses. Based on the professional development classification procedures, which can be found on page 67 three distinct professional development

groups were formed, which included: 1) one-time training/workshop ($n = 34$), 2) ongoing training series ($n = 38$), and 3) technical assistance/coaching ($n = 38$). RQ3a and RQ3b, which are described below, involve group comparisons using these three professional development groups as well as correlations.

RQ3a. Are there differences in teachers' familiarity with and knowledge of *Foundations* associated with the type and/or amount of *Foundations* professional development they have experienced?

Data were analyzed in two ways. First, five One-way Analysis of Variance (ANOVA) tests were conducted to examine whether teachers who participated in different types of professional development (i.e., one-time training/workshop, ongoing training series, technical assistance/coaching) differed with respect to their overall familiarity with and knowledge of *Foundations*. Teachers' familiarity with *Foundations* was measured by mean scores on the *Familiarity of Foundations* scale and three subscales whereas teachers' knowledge of *Foundations* was measured by summary scores on the *Knowledge of Foundations* scale. Appropriate post-hoc tests (Games-Howell post-hoc procedure for analyses related to familiarity with *Foundations* and Tukey post-hoc procedure for analyses related to knowledge of *Foundations*) were completed to determine statistically significant differences between professional development groups. Secondly, five Spearman's rank-order correlations were run to assess the relationship between hours of *Foundations* training and teachers' familiarity with and knowledge of *Foundations* as measured by mean scores on the *Familiarity with Foundations* scale and subscales and summary scores on the *Knowledge of Foundations* scale. It is important to note that Spearman's rank-order correlation test

was chosen because the assumption of normality was violated, thus, a Pearson's correlation test could not be completed.

RQ3b. Are there differences in how teachers report using *Foundations* associated with the type and/or amount of *Foundations* professional development they have experienced?

Data were analyzed in two ways. A One-way Analysis of Variance (ANOVA) with Games-Howell post hoc procedure was used to examine the question of whether teachers who participated in different types of professional development (i.e., one-time training/workshop, ongoing training series, and technical assistance/coaching) differed with respect to their general implementation or use of *Foundations* as measured by mean scores on the *General Implementation of Foundations* scale. Secondly, a Spearman's rank-order correlation was conducted to assess the relationship between hours of *Foundations* training and teachers' general use of *Foundations* as measured by mean scores on the *General Implementation of Foundations* scale. It is important to note that a Spearman's rank-order correlation test was chosen because the assumption of normality was not met; therefore, a Pearson's correlation test could not be completed.

RQ4. What types of professional development experiences and other supports do teachers feel they need in order to use *Foundations* effectively?

RQ4 analyses. Two survey questions addressed the extent to which teachers believed they would benefit from additional support/guidance and how receptive teachers were to receiving professional development related to *Foundations*. The number of teachers who selected each response (i.e., not at all, a little, somewhat, a lot, and very much) was computed. The third question included a list of supports related to professional development (seven items), resources/print materials (eight items), and

other supports (two items). Teachers were instructed to rate on a five-point scale how much each of the supports would help them with their implementation of *Foundations* in their classroom. These data were examined by computing the mean, standard deviation, and range for individual items to see which items were rated the highest and lowest. Additionally, teachers were asked to describe other supports that would help them use *Foundations* effectively. Open-ended responses were examined to identify commonalities. Lastly, a list of potential barriers/challenges related to *Foundations* implementation was provided (nine items). Teachers were instructed to rate on a five-point scale how much the challenges/barriers prevented them from using *Foundations* in their classroom. These data were examined by computing the mean, standard deviation, and range for individual items to see which items were rated the highest and lowest. Additionally, teachers were asked to describe other barriers/challenges that prevented them from using *Foundations* effectively. Open-ended responses were examined to identify similarities or themes in teachers' responses. Next, specific analyses for RQ4a and RQ4b will be described.

RQ4a. Are there differences in the professional development needs/supports reported by teachers working in different program sectors?

In order to address RQ4a, a series of Kruskal-Wallis analysis of variance (ANOVA) tests were conducted to determine if there were significant differences in teachers' scores on the 17 items related to supports needed for *Foundations* implementation between three program sectors which included: 1) Head Start, 2) public school, and 3) child care. It is important to note that data for one teacher who worked in a Family Child Care Homes ($n = 1$) was excluded from these analyses due to a small sample size. It is also important to note that Kruskal-Wallis ANOVA tests were selected

because data failed to meet assumptions for normality. Furthermore, a Bonferroni correction was applied to the alpha levels to control for the possibility of obtaining false positive results (type I error), since multiple ANOVAs were being conducted on seventeen items in a single dataset. For statistically significant items, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons.

RQ4b. Are there differences in the professional development needs/supports reported by teachers based on the type of *Foundations* professional development they have experienced?

Kruskal-Wallis analysis of variance (ANOVA) tests were also conducted to address RQ4b which examined whether there were significant differences in teachers' scores on the 17 items related to supports needed for *Foundations* implementation between professional development groups which included: 1) one-time training/workshop, 2) ongoing training series, and 3) technical assistance/coaching. The Kruskal-Wallis ANOVA tests were selected because data failed to meet assumptions for normality. Similar to RQ4a, a Bonferroni correction was applied to the alpha levels to reduce the possibility of a type I error. Pairwise comparisons using Dunn's (1964) procedure with a Bonferroni correction were conducted for statistically significant items.

Interview and document review analyses. The purpose of the interviews and document review was to gain a more in-depth understanding about how teachers use *Foundations*, their professional development experiences, and identify supports that would help them use the document more effectively. The following section will first describe analyses used for the interviews, followed by analyses conducted for the document review.

Interview analyses. The study used a framework analysis, which included the following steps for data analysis: 1) familiarization, 2) identifying a thematic framework/initial coding, 3) coding, 4) charting (by case and theme), and 5) mapping and interpretation (Ritchie, Lewis, Nicholls, & Ormston, 2013). These specific steps in the data analysis plan for interviews are further described.

After interviews were transcribed, data were organized and cleaned to ensure the accuracy of the transcriptions. This step also helped researchers familiarize themselves with the data. Next, a thematic framework or coding plan was developed based on research questions. For example, when reading through transcriptions, teachers' comments that related specifically to general implementation of *Foundations* were coded as RQ2. Transcriptions were read again to identify more specific themes for each of the research questions. For instance, when reading through data coded as RQ2, additional themes emerged such as the use of *Foundations* to develop lesson plans. Thus, in many instances the data received secondary codes such as "lesson plans." Transcriptions were read-through several more times until all data were coded. Next, charts were created using the framework. Each chart corresponded to one research question and the charts were both case (individual teacher) and theme-based. This means that themes identified for each research question were listed horizontally across the top of the chart, and specific cases (nine teachers) were listed vertically, creating a matrix. Next, data were entered into the matrix. Charts were verified by a second person, and discrepancies in coding were discussed and resolved. Lastly, each chart was used to identify patterns in the data and recurrent themes.

Document review analyses. As part of the interview, teachers were asked to provide evidences that demonstrated their use of *Foundations*. Examples of evidences

included lesson plans, bulletin boards/displays, parent newsletters, and activities or handouts given to families. These evidences were used to provide specific examples to better understand quantitative findings pertaining to the research questions. For example, quantitative data related to lesson plans were computed for RQ2. Lesson plans collected in the document review were used to provide detailed descriptions about how teachers' specifically used *Foundations* to develop lesson plans.

Secondary Component

The secondary purpose of the study was to examine the knowledge of and experiences with *Foundations* within a sample of individuals from the broader early childhood workforce across the state who may or may not have engaged in professional development related to *Foundations*. The descriptive data provided a snapshot of the extent to which efforts to support the use of *Foundations* have reached different audiences and provided information that can be used to plan future professional development. A short electronic survey that addressed general familiarity with *Foundations*, professional development engagement related to *Foundations*, and barriers/challenges to accessing and using *Foundations*, was sent out to early childhood professionals (e.g., teachers, administrators, etc.) across North Carolina. Participants for this portion of the study were recruited using a combination of sampling techniques including convenience and snowball sampling.

General/Broad Sample

The sample for the secondary component of the study included 117 early childhood professionals across North Carolina. Over half (55.6%) of participants were from the piedmont region of the state, a third (33.3%) were from the mountain region, a small percentage (3.4) were from the coastal plains, and the remaining participants

(7.7%) did not provide this information. As shown in Table 2, majority of participants had a bachelor's degree or graduate degree (48.7% and 38.5% respectively). Almost a third (31.6%) of participants were preschool teachers, approximately a fifth (21.4%) were ECE directors/administers, and another fifth (21.4%) were trainers/technical assistance providers. A smaller number of individuals worked in higher education (6.0%) or as an infant/toddler teacher (4.3%), and the remaining participants (11.1%) were classified as "other." Some of these "other" positions included NCAEYC support staff, executive director, regional director, and kindergarten teacher. Participants also reported the type of program/agency/institution where they were currently employed. The majority of participants worked in child care programs (42.7%), followed by Head Start (17.1%), public school (9.4%), institutions of higher education (7.7%), ECE agencies (e.g., Smart Start, Partnerships for Children; 7.7%), and the remaining participants (11.1%) were classified as "other." The "other" places participants reported included contract provider for CDSA, non-profit, and private. On average, participants had been working in the early childhood education field for an average of 18.81 years ($SD = 9.49$, Range = 41 years).

Measure

The electronic survey (see Appendix D) was developed and electronically distributed using Qualtrics online survey software. The survey included fourteen open- and closed-ended questions related to 1) general familiarity and use of *Foundations*, 2) the type and amount of *Foundations* professional development experienced, and 3) barriers to accessing and using *Foundations*. The survey took approximately five to seven minutes to complete.

Procedures

The electronic survey was sent out to the larger early childhood workforce through a variety of means, including posting the link on the North Carolina Association for the Education of Young Children (NCAEYC) website for four weeks. The notification of the link was sent out to over 2,000 NCAEYC members in North Carolina via email. Additionally, key personnel from local and state programs and agencies (e.g., Head Start Programs, CCR&R Network, Smart Start) sent out the link to the survey. These individuals were asked to send an email to their employees and other early childhood contacts in their community. The email included a description of the study and provided a link to the Qualtrics survey.

Data Analysis Plan

Data were downloaded from Qualtrics into PASW software for analysis. The first step of the data analysis plan was to “clean” the data and check the accuracy by running frequencies for all items. The secondary component of the current study was organized into one research question. The data analysis plan for research question five will be further described.

RQ5. In the general population of early childhood professionals in North Carolina, how familiar are they with *Foundations*, what types and amount of professional development pertaining to *Foundations* have they experienced, and what are the barriers to accessing and using *Foundations*?

RQ5 analyses. Participants were asked to report which versions of *Foundations* they had heard of as well as the versions they use in their work. The number of participants who indicated each response was calculated. The number of participants who reported they have a copy of *Foundations* was computed and open-ended

responses were examined to identify where participants obtained their copy. Additionally, the number of participants who had participated in each type of training (i.e., conference/workshop, CCR&R 0.5 CEU training, DPI 7-module training series, in-service training at center/program level, other) was computed. For individual participants who reported they had participated in at least one type of training, the total number of trainings reported was computed, along with the mean, standard deviation and range for this variable. The mean, standard deviation and range was also calculated based on the total number of hours of training participants reported. To understand the extent to which participants believed they would benefit from additional support/guidance, the number of participants that select each response (i.e., not at all, a little, somewhat, a lot, and very much) was computed. Next, participants were asked to rate on a five-point scale how much each of nine challenges/barriers prevented them from using *Foundations* in their work. These data were examined by computing the mean, standard deviation, and range for individual items to see which items were rated the highest and lowest. Additionally, participants were asked to describe other barriers/challenges that prevented them from using *Foundations* effectively. Open-ended responses were examined to identify similarities or themes in responses.

CHAPTER VI

RESULTS

Primary Component

RQ1

The aim of RQ1 was to examine the types and amount of professional development opportunities teachers had related to the revised *Foundations* and to determine if teachers' participation in professional development varied by sector (i.e., child care, pre-K, Head Start, public school, and FCCH). In order to address RQ1, results related to training will be described first, followed by results related to technical assistance/coaching. Lastly, variations in professional development engagement by sector will be described.

Training. Teachers participated in an average of 1.51 ($SD = 0.81$) types of training related to *Foundations*. The majority of teachers (64.5%, $n = 71$) only participated in one type of training related to *Foundations* and approximately a quarter of teachers (24.5%, $n = 27$) participated in two types of training. The remaining teachers (11.0%, $n = 12$) engaged in three to four types of training. On average, teachers reported that they received 13.09 hours of professional development related to *Foundations*. The number of hours of professional development reported ranged from a minimum of four hours to a maximum of 50 hours with a standard deviation of 11.05.

As shown in Table 3, approximately 61% ($n = 67$) of teachers participated in the *NC Foundations for Early Learning and Development* training offered by the Child Care Resource and Referral (CCR&R) Network for 0.5 CEUs. Approximately 49% ($n = 54$) of

teachers participated in at least one module of DPI's seven-module training series titled *Effective Teacher Practices Supporting NC Foundations for Early Learning and Development*. Out of these teachers, nearly all had participated in all seven modules (81.5%, $n = 44$), with the fewest number of teachers completing modules five, six, and seven. Nearly a fourth of teachers (22.7%, $n = 25$) received training related to *Foundations* during an in-service training at their place of employment. A smaller number of teachers engaged in workshops at local conferences such as the *It Starts with Us: Solid Foundations, Successful Futures* conference (10.0%, $n = 11$) or other workshops (8.2%, $n = 9$).

Technical assistance/coaching. Teachers also reported what types of technical assistance/coaching specifically related to using *Foundations* they had participated in within the last year. Three-fourths of teachers (75.5%, $n = 83$) reported they had received some type of technical assistance/coaching related to using *Foundations*. Teachers participated in an average of 1.40 ($SD = 1.13$) types of technical assistance/coaching related to *Foundations*. The number of types of technical assistance teachers reported ranged from zero to four. As shown in Table 3, technical assistance from a center/program-level supervisor or administrator was the most commonly reported type of technical assistance received (43.6%, $n = 48$). The second most commonly reported type of technical assistance was mentoring relationships with a more experienced teacher (37.4%, $n = 41$). Coaching from an NC Pre-K EESLPD Office Mentor Teacher or Evaluator was the third most common type of technical assistance reported (34.5%, $n = 38$) followed by technical assistance from Smart Start or CCR&R agency (24.5%, $n = 27$).

Variations by sector. Lastly, teachers' participation in different types of professional development opportunities was examined by sector to identify trends in professional development engagement (see Table 3). Over half of teachers worked in child care (55.5%, $n = 61$) and almost a third of teachers (30.9%, $n = 34$) worked in public schools. A smaller percentage of teachers were from Head Start programs (12.7%, $n = 14$) and family child care homes (FCCH; 1.0%, $n = 1$). Teachers working in public schools (88.2%, $n = 30$) and Head Start (85.7%, $n = 12$) most commonly reported they had participated in DPI's ongoing 7-module training series titled *Effective Teacher Practices Supporting NC Foundations for Early Learning and Development*. Head Start teachers also commonly reported engagement in in-service training at their local program (85.7%, $n = 12$). Child care teachers (78.7%, $n = 48$) most commonly reported engagement in the one-time training titled *NC Foundations for Early Learning and Development* training offered by local Child Care Resource and Referral agencies for 0.5 CEUs.

The type of technical assistance/coaching teachers reported also varied by sector. It is noteworthy that nearly all Head Start teachers (92.9%) reported they had received some type of technical assistance/coaching related to *Foundations*, whereas only 66.6% of public school teachers and 45.4% of child care teachers reported that they had received technical assistance/coaching related to *Foundations*. Head Start teachers commonly reported they received technical assistance/coaching from a supervisor/administrator (92.9%, $n = 13$) as well as coaching from an NC Pre-K EESLPD Office Mentor Teacher or Evaluator (92.9%, $n = 13$). Public school teachers most commonly reported technical assistance/coaching from a supervisor/administrator (44.1%, $n = 15$). Lastly, child care teachers most commonly reported receiving technical

assistance/coaching from a NC Pre-K EESLPD Office Mentor Teacher or Evaluator (41.0%, $n = 25$) and mentoring from a more experienced teacher (39.3%, $n = 24$).

RQ2

The objective of RQ2 is to examine teachers' familiarity with and knowledge of *Foundations* as well the ways in which teachers' report using *Foundations*. To begin, results related teachers' familiarity and knowledge of *Foundations* will be reported. Next, results related to teachers' general implementation of *Foundations* will be addressed, followed by results related to implementation of *Foundations* with families, dual language learners, and children with disabilities.

Familiarity with *Foundations*. Teachers were asked to rate their familiarity with 14 items on the *Familiarity with Foundations* scale (1 = Not at all Familiar; 5 = Extremely Familiar). Teachers' had a mean response of 2.97 ($SD = 0.69$) on the *Familiarity with Foundations* scale. Teachers' averaged responses ranged from 1.5 to 4.43, with means closer to 5 indicating that teachers' were "extremely familiar" with that aspect of *Foundations*. The three subscales of the *Familiarity with Foundations* scale were also examined. Not surprisingly, teachers' average scores were highest on the *Familiarity with Foundations Information Related to Preschoolers* subscale ($M = 3.57$, $SD = 0.83$). Teachers' average responses were somewhat lower on the *Familiarity with Foundations Information Related to Working with Children with Special Circumstances* subscale ($M = 2.43$, $SD = 0.95$) and the *Familiarity with Foundations Information Related to Infants and Toddlers* subscale ($M = 2.03$, $SD = 0.75$), indicating that on average, teachers were less familiar with this information in *Foundations*.

Knowledge of *Foundations*. On the *Knowledge of Foundations* scale, the first eight items relate to teachers' knowledge of age groupings that are used to organize

developmental indicators in *Foundations*. On average, teachers got 4.60 ($SD = 2.32$) correct out of eight items. Mean correct responses ranged from zero to eight. As indicated in Table 4, majority of teachers (79.1%, $n = 87$) knew that kindergarteners (ages 5–6) were not one of the age groupings used to organize developmental indicators in *Foundations*. Additionally, majority of teachers knew that younger preschoolers (36 – 48 months) and older preschoolers (48–60 months) were correct age groupings (63.6% and 71.8% respectively). It is unclear why only a small percentage of teachers (35.5, $n = 39$) knew that preschoolers (3–5 years) was an incorrect age grouping. It is possible that some teachers were confusing the age grouping of the original *Foundations* document with the age groupings found in the revised *Foundations*. Approximately half (45.5% - 47.3%) of teachers correctly identified the age groupings for younger children including infants (birth–12 months), younger toddlers (8–21 months), and older toddlers (18–36 months), which is not surprising since the sample included only preschool teachers.

The next 10 items related to teachers' knowledge of the domains included in *Foundations*. On average, teachers got 7.98 ($SD = 2.20$) items correct. Mean correct responses ranged from one to 10. As indicated in Table 4, nearly all teachers correctly identified the five domains in *Foundations*, which included Approaches Toward Play and Learning (99.1%, $n = 109$), Cognitive Development (96.4%, $n = 106$), Emotional and Social Development (97.3%, $n = 107$), Health and Physical Development (93.6%, $n = 103$), and Language Development and Communication (96.4%, $n = 106$). On average, fewer teachers knew that specific content areas such as Mathematics, Science, and Creative Arts were not domains included in *Foundations*, with percentages of correct responses ranging from 61.8% - 67.3%. Over a third of teachers (36.4%, $n = 40$) incorrectly indicated that Children with Disabilities was a domain in *Foundations* and

nearly half of teachers (43.6%, $n = 48$) incorrectly indicated that Dual Language Learning (DLL) was a domain found in *Foundations*. Although information about working with children with disabilities and children who are dual language learners is addressed in *Foundations*, these are not one of the five domains.

The final section of the *Knowledge of Foundations* scale includes eight true or false items related to teachers' general knowledge of *Foundations*. The number of correct responses ranged from one to eight, with an average of 4.38 ($SD = 1.73$) correct responses. As indicated in Table 4, only a small number of teachers (31.8%, $n = 35$) knew that developmental indicators describe expectations that many children will reach toward the *end* of their respective age level (item c) and that *Foundations* does not include specific developmental indicators that relate to dual language learners (30%, $n = 33$; item d). On the other hand, majority of teachers knew that *Foundations* could not be used in place of their classroom curriculum (81.8%, $n = 90$; item e) and that the developmental indicators are organized in a developmental continuum of learning from birth to 60+ months (99.1%, $n = 104$; item g). The percentage of teachers who responded correctly on the remaining items ranged from 39.1% to 62.7%, so there was less agreement on these items measuring teachers' general knowledge of *Foundations*.

Lastly, correct responses for all three sections of the survey related to teachers' knowledge of *Foundations* (i.e., knowledge of ages, knowledge of domains, and general knowledge) was added together in the *Knowledge of Foundations* scale. The scale included a total of 26 items. Teachers' scores ranged from 3 to 26, with a mean of 16.96 ($SD = 4.91$) correct responses.

General implementation of *Foundations*. The next section includes results related specifically to lesson planning followed by teachers' general implementation or

use of *Foundations* in the classroom. Nearly all teachers reported they created lesson plans on a weekly basis (93.6%, $n = 103$), but only 73.6% ($n = 81$) used their lesson plans on a daily basis and 23.6% ($n = 26$) used their lesson plans on a weekly basis. Teachers also reported how often they used *Foundations* when creating their lesson plans. Nearly half of teachers (47.3%, $n = 52$) reported they *always* used *Foundations* when creating lesson plans, a fourth of teachers (24.5%, $n = 27$) reported they *almost always* used *Foundations* when creating lesson plans, and a fifth of teachers (20.0%, $n = 22$) reported they *sometimes* used *Foundations* when creating lesson plans. Only a small number of teachers (8.1%, $n = 9$) reported they *rarely* or *never* used *Foundations* when creating lesson plans.

In the *General Implementation of Foundations* scale, teachers reported on a scale of one to five (1 = not at all, 5 = always) the degree to which they used *Foundations* for other purposes in their classroom. As shown in Table 5, the most predominant ways teachers' reported using *Foundations* was to observe children to guide their lesson plans ($M = 3.67$, $SD = 1.06$), document children's learning ($M = 3.62$, $SD = 1.17$), and plan small and large group activities ($M = 3.60$, $SD = 1.13$). Using *Foundations* to help select classroom materials ($M = 3.27$, $SD = 1.15$), decide what books to make available or read to children ($M = 3.26$, $SD = 1.25$), and prepare the outdoor environment ($M = 3.21$, $SD = 1.21$) were rated the lowest by teachers. It is important to note that the range for all eleven items was four, indicating that there was variability across teachers' responses.

A small number of teachers (14.5%, $n = 16$) responded to the open-ended question that asked them to describe any additional ways they used *Foundations* in their classroom. Out of these responses, eight teachers described ways they used

Foundations in their planning. Most of these teachers specifically referenced using *Foundations* when developing lesson plans. For example, one teacher wrote, “I use it while lesson planning to guide my activities.” Another teacher wrote, “*Foundations* is always used in my classroom when creating lesson plans, activities, materials, centers, etc.” Another teacher specifically mentioned that she used *Foundations* to get ideas for teaching. Seven teachers described how they used *Foundations* with families to share information about children’s development and learning. Some of the responses included, “communication with parents to share growth and explain how their child is developing” and “teach parents about skills children are learning.” A few of the responses were less specific such as “parent discussions” and “communications with families.” Only one teacher mentioned using *Foundations* for setting goals and assessment purposes. This teacher wrote that she used *Foundations* for “making changes to goals and helping with student assessments.”

Lastly, the 11 items on the *General Implementation of Foundations* scale were combined and teachers’ average score on *Foundations* implementation was 3.45 ($SD = 0.99$). This indicates that on average, teachers reported using *Foundations* often in the classroom. Teachers were also asked to rate on a five-point scale how important it is to use *Foundations* in their work (1 = Not Important, 5 = Very Important). On average, teachers’ reported that using *Foundations* was important to their work as a teacher ($M = 4.39$, $SD = 0.80$, Range = 3).

Implementation of *Foundations* with families. Teachers reported how often they used *Foundations* with families on a scale of one to five (1 = *not at all*, 5 = *always*) for a six specific purposes. As shown in Table 5, the most predominant way teachers’ reported using *Foundations* with families was to describe how/what children are learning

in the classroom supports their readiness for school success ($M = 3.45$, $SD = 1.21$). Teachers also used *Foundations* to show families how what they are teaching fits with the children's current level of development ($M = 3.40$, $SD = 1.24$) and to share information with families about their own child's development ($M = 3.40$, $SD = 1.21$). Using *Foundations* to share activities with families ($M = 3.38$, $SD = 1.28$), to answer family questions/concerns about their child's development ($M = 3.35$, $SD = 1.22$), and share knowledge about general child development ($M = 3.20$, $SD = 1.18$) were rated slightly lower by teachers. It is important to note that the range for all six items was four, indicating that there was variability across teachers' responses.

A small number of teachers (8.2%, $n = 9$) responded to the open-ended question asking them to describe any additional ways they use *Foundations* with families. Out of these responses, five teachers described how they used *Foundations* to explain or justify their instructional practices. For example, one teacher wrote that she "shows parents who have concerns with kindergarten readiness how *Foundations* helps a child grow the developmental skills to be ready without worksheets." Other teachers described how *Foundations* is used to show parents that "play is beneficial" and that their practices are "sound and academically appropriate." Two teachers described in detail how they use *Foundations* to address family concerns about their child's development. For example, one teacher wrote that she has families "list any concerns they may have about their child's development and then use *Foundations* to help with these concerns." Lastly, two teachers described how *Foundations* is shared with families through "progress reports" and by adding "suggestions/information to family newsletters."

Next, teachers were asked to rate on a five-point scale how important it is to share information about *Foundations* with families (1 = Not Important, 5 = Very

Important). On average, teachers reported that sharing information about *Foundations* with families was important to their work as a teacher ($M = 4.10$, $SD = 1.11$, Range = 4).

One of the ways teachers can share information about *Foundations* with families is by providing them with a copy of *Foundations for Families*, a resource specifically designed to share information related to *Foundations* with families with young children. Teachers were asked if they were familiar with this resource and if so, did they share this document with families. Only a quarter of teachers were familiar with this documents (24.5%, $n = 27$). Approximately 70% ($n = 19$) of teachers who were familiar with this document also provided a copy of the document to families. The most common way this resource was provided to families was during parent-teacher conferences (63.0%, $n = 17$), followed by parent orientation (48.1%, $n = 13$), open house (37.0%, $n = 10$), and posting the document in the classroom for families to see (25.9%, $n = 7$).

Implementation of Foundations with dual language learners. Over three-fourths of participants (82.7%, $n = 91$) indicated they had worked with children who are dual language learners (DLL) in their classroom within the last two years. Teachers who had worked with DLL ($n = 91$) reported how often they used *Foundations* when working with DLL on a scale of one to five (1 = not at all, 5 = always) for a six different purposes. On average, these teachers' reported using *Foundations* when working with DLL only some of the time. As shown in Table 5, using *Foundations* to adapt activities for children who are DLL was most commonly reported ($M = 2.92$, $SD = 1.33$), followed by setting goals for DLL ($M = 2.87$, $SD = 1.34$) and learning about specific strategies for working with DLL ($M = 2.87$, $SD = 1.38$). Using *Foundations* when communicating with families about DLL ($M = 2.81$, $SD = 1.39$) and to learn about the DLL learning process ($M = 2.78$, $SD = 1.35$) were rated slightly lower by teachers.

Additionally, the total number of ways teachers who work with DLL used *Foundations* with to support their work with DLL was calculated. Results indicated that on average, these teachers used *Foundations* with DLL in 4.71 ways ($SD = 2.35$). It is important to note that there was great variability in teachers' responses, with some teachers indicating they did not use *Foundations* at all when working with DLL and other teachers indicating that they used *Foundations* six different ways with DLL. Lastly, teachers were asked to describe any additional ways they used *Foundations* when working with DLL. Only two teachers responded, but their comments indicated that they were unaware that *Foundations* had information related to DLL.

Implementation of *Foundations* with children with disabilities. Almost three-fourths of participants (71.8%, $n = 79$) indicated they had worked with at least one child with a diagnosed disability in their classroom within the last two years. Teachers who had worked with children with disabilities reported how often they used *Foundations* on a scale of one to five (1 = not at all, 5 = always) for seven specific purposes. On average, these teachers reported using *Foundations* when working with children with disabilities only some of the time. As shown in Table 5, using *Foundations* to communicate with therapists and specialists was most commonly reported by teachers ($M = 3.35$, $SD = 1.37$), followed by using *Foundations* to understand the individualized development of children with disabilities ($M = 3.32$, $SD = 1.33$), selecting appropriate materials ($M = 3.32$, $SD = 1.31$), and talking to families about children's development ($M = 3.32$, $SD = 1.37$). Using *Foundations* when setting individualized goals for children ($M = 3.28$, $SD = 1.32$) and setting goals for IEP/help in writing an IEP ($M = 3.09$, $SD = 1.38$) were rated lowest by these teachers.

Additionally, the total number of ways the sub-sample of teachers used *Foundations* with children with disabilities was calculated. Results indicated that on average, these teachers used *Foundations* in their work with children with disabilities in 6.10 ways ($SD = 2.16$). It is important to note that there was great variability in teachers' responses, with some teachers indicating they did not use *Foundations* at all to inform their work with children with disabilities and other teachers indicating that they used *Foundations* seven different ways. Lastly, teachers were asked to describe any additional ways they used *Foundations* when working with children with diagnosed disabilities. Only one teacher responded and her comment was unrelated to using *Foundations*.

RQ3

The overarching goal of RQ3 was to determine if the type (i.e., one-time training/workshop, on-going training series, and technical assistance/coaching) and amount (i.e., number of hours of training) of *Foundations* professional development are associated with differences in how prepared caregivers are to use *Foundations*. In RQ3a, differences in teachers' familiarity with and knowledge of *Foundations* associated with the type and amount of *Foundations* professional development they experienced are reported. In RQ3b, differences in how teachers reported using *Foundations* associated with the type and amount of *Foundations* professional development they experienced are reported.

Familiarity. To address part one of RQ3a, four One-way Analysis of Variance (ANOVA) tests were conducted to examine the question of whether teachers who participated in different types of professional development differ with respect to their familiarity with *Foundations*. The independent variable represented the three different

types of professional development: 1) one-time training/workshop, 2) ongoing training series, and 3) technical assistance/coaching. The dependent variables were teachers' average scores on the *Familiarity with Foundations* scale and subscales (1 = *not at all familiar*, 5 = *extremely familiar*). See Table 6 for the sample sizes, means, standard deviations, and ANOVA results for the *Familiarity with Foundations* scale and subscales for each of the three professional development groups.

The first ANOVA examined whether teachers who participated in different types of professional development differed with respect to their overall familiarity with *Foundations* as measured by their mean scores on the *Familiarity with Foundations* scale. The test for normality, examining standardized skewness and the Shapiro-Wilks test, indicated the data were statistically normal. However, the Levene's test for equality of variances revealed that the homogeneity of variance assumption was not met ($p = .008$). As such, the Welch's F test was used and an alpha level of 0.05 was used for all subsequent analyses. The one-way ANOVA revealed that teachers' overall familiarity with *Foundations* (*Familiarity with Foundations* scale mean score) was statistically significantly different between professional development groups, Welch's $F(2, 69.50) = 11.61, p < .001$, indicating that average scores on *Familiarity with Foundations* scale were not the same across groups. The estimated η^2 indicated that approximately 15% ($\eta^2 = 0.15$) of the total variation in average scores on the *Familiarity with Foundations* scale is attributable to differences between professional development groups.

Post hoc comparison, using the Games-Howell post hoc procedure, were conducted to determine which pairs of the three professional development group means differed significantly. These results are presented in Table 7 and indicate that teachers in the ongoing training series group ($M = 3.27, SD = 0.73$) and teachers in the technical

assistance/coaching group ($M = 2.98$, $SD = 0.69$) had significantly higher average scores on the *Familiarity with Foundations* scale than teachers in the one-time training/workshop group ($M = 2.62$, $SD = 0.44$). The Cohen's effect size values for the two significant effects were 1.06 and 0.62 respectively.

The second ANOVA examined whether teachers who participated in different types of professional development differed with respect to their scores on the *Familiarity with Foundations Information Related to Preschoolers* subscale. The *Familiarity with Foundations Information Related to Preschoolers* subscale scores for each group were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$). However, the assumption of homogeneity of variance was not met for this data ($p < .001$). Thus the Welch adjusted F ratio followed by Games-Howell post-hoc follow-up procedures were used to test the differences between all pairwise comparisons. The one-way ANOVA revealed that teachers' *Familiarity with Foundations Information Related to Preschoolers* subscale scores was statistically significantly different between professional development groups, Welch's $F(2, 67.59) = 15.343$, $p < .001$, indicating that average score on *Familiarity with Foundations Information Related to Preschoolers* subscale were not the same across groups. The estimated η^2 indicated that approximately 17% ($\eta^2 = 0.17$) of the total variation in average scores on the *Familiarity with Foundations* scale is attributable to differences between professional development groups.

The Games-Howell post hoc procedure was conducted to determine which pairs of the three professional development group means differed significantly. These results are given in Table 8 and indicate that teachers in the ongoing training series group ($M = 3.92$, $SD = 0.90$) and teachers in the technical assistance/coaching group ($M = 3.65$, $SD = 0.82$) had significantly higher average scores on the *Familiarity with Foundations*

Information Related to Preschoolers subscale than teachers in the one-time training group ($M = 3.09$, $SD = 0.47$). The Cohen's effect size values for the two significant effects were 1.16 and 0.84 respectively.

An examination of whether teachers who participated in different types of professional development differed with respect to their scores on the *Familiarity with Foundations Information Related to Infants and Toddlers* subscale was completed with the third ANOVA. There were no statistically significant differences in scores on the *Familiarity with Foundations Information Related to Infants and Toddlers* subscale between professional development groups, $F(2, 70.77) = 2.79$, $p = 0.069$. The fourth ANOVA, which examined whether teachers who participated in different types of professional development differed with respect to their scores on the *Familiarity with Foundations Information Related to Working with Children with Special Circumstances* subscale, was also not significant $F(2, 71.23) = 3.58$, $p = 0.058$.

A Spearman's rank-order correlation was run to assess the relationship between hours of *Foundations* training and familiarity with *Foundations* as measured by the *Familiarity with Foundations* scale and subscales. Preliminary analysis showed the relationships to be monotonic, as assessed by visual inspection of the scatterplots. As predicted, there was a moderate positive correlation between hours of training and teachers' overall familiarity with *Foundations*, $r_s(103) = 0.433$, $p < .01$. There was also a moderate positive correlation between hours of training and teachers' familiarity with *Foundations* information related specifically to preschoolers $r_s(103) = 0.400$, $p < .01$. There were only weak correlations between hours of training and teachers' familiarity with *Foundations* information related to infants and toddlers ($r_s(103) = 0.355$, $p < .01$) and children with special circumstances ($r_s(103) = 0.313$, $p < .01$).

Knowledge. To address part two of RQ3a, a One-way Analysis of Variance (ANOVA) test was used to examine the question of whether teachers who participated in different types of professional development differ with respect to their knowledge of *Foundations*. The independent variable represented the different types of professional development with three groups being represented: 1) one-time training/workshop, 2) ongoing training series, and 3) technical assistance/coaching. The dependent variable was teachers' knowledge of *Foundations*, which was measured by total number of correct responses on the *Knowledge of Foundations* scale. *Knowledge of Foundations* scores were normally distributed, as assessed by the Shapiro-Wilk's test ($p > 0.05$) and there was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = 0.06$).

The one-way ANOVA revealed that teachers' *Knowledge of Foundations* scores was statistically significantly different between professional development groups, $F(2, 107) = 8.46$, $p < .001$, indicating that average scores on the *Knowledge of Foundations* scale were not the same across groups. Approximately 8% ($\eta^2 = 0.08$) of the total variation in teachers' scores on the *Knowledge of Foundations* scale can be attributed to differences between professional development groups. The Tukey post hoc procedure was conducted to determine which pairs of the three professional development group means differed significantly. These results are given in Table 9 and indicate that teachers in the ongoing training series group ($M = 19.21$, $SD = 3.90$) had significantly higher average scores on the *Knowledge of Foundations* scale than teachers in the one-time training/workshop group ($M = 14.76$, $SD = 5.24$) and teachers in the technical assistance/coaching group ($M = 16.68$, $SD = 4.66$). The Cohen's effect sizes for the two significant effects were 0.96 and 0.54 respectively.

A Spearman's rank-order correlation was run to assess the relationship between hours of *Foundations* training and knowledge of *Foundations* as measured by summary scores on the *Knowledge of Foundations* scale. Preliminary analysis showed the relationship to be monotonic, as assessed by visual inspection of the scatterplots. However, contrary to hypothesized results, there was no correlation between hours of *Foundations* training and teachers' knowledge of *Foundations* ($r_s = 0.149$, $n = 105$, *ns*).

General implementation. To address RQ3b, a One-way Analysis of Variance (ANOVA) test was used to examine the question of whether teachers who participated in different types of professional development differ with respect to their general implementation or use of *Foundations*. The independent variable was the three groups represented: 1) one-time training/workshop, 2) ongoing training series, and 3) technical assistance/coaching. The dependent variable was teachers' general use of *Foundations*, which was measured by the mean scores on the *General Implementation of Foundations* scale (1 = not at all familiar, 5 = extremely familiar). *General Implementation of Foundations* mean scores were normally distributed, as assessed by the Shapiro-Wilk's test ($p > 0.05$). However, the assumption of homogeneity of variance was not met for this data ($p < .001$). Thus the Welch's adjusted *F* ratio followed by Games-Howell post-hoc follow-up procedures was used to test differences between all pairwise comparisons.

The one-way ANOVA revealed that teachers' average scores on the *General Implementation of Foundations* scale was statistically significantly different between professional development groups, Welch's $F(2, 67.69) = 3.18$, $p < .05$, indicating that average scores on the *General Implementation of Foundations* scale were not the same across groups.

The Games-Howell post hoc procedure was conducted to determine which pairs of the three professional development group means differed significantly (see Table 10). As predicted, teachers in the technical assistance/coaching group ($M = 3.70$, $SD = 0.87$) had significantly higher average scores on the *General Implementation of Foundations* scale compared to teachers in the one-time training group ($M = 3.07$, $SD = 1.21$), with an effect size of 0.60.

A Spearman's rank-order correlation was run to assess the relationship between hours of *Foundations* training and teachers' general use of *Foundations* as measured by means scores on the *General Implementation of Foundations* scale. Preliminary analysis showed the relationships to be monotonic, as assessed by visual inspection of the scatterplots. However, contrary to hypothesized results, there was no correlation between hours of *Foundations* training and general implementation or use of *Foundations* ($r_s = 0.153$, $n = 105$, *ns*).

RQ4

Results for RQ4 will begin with descriptive data related to supports teachers reported they needed to be able to use *Foundations* followed by challenges/barriers to using *Foundations*. Next, RQ4a, variations in professional development needs/supports by program sector, will be addressed. Lastly, RQ4b, variations in professional development needs/supports by professional development type, will be presented.

Supports needed to effectively use *Foundations*. Majority of teachers reported that they would benefit *a lot* (34.5%, $n = 38$) or *very much* (32.7%, $n = 36$) from additional support/guidance to understand and use *Foundations*. Furthermore, almost half of teachers (44.5%, $n = 49$) reported that they were *very much* receptive to receiving

professional development related to *Foundations* and another third (33.6%, $n = 37$) were *a lot* receptive.

Teachers also rated on a 5-point scale (1 = *Not at all*, 5 = *Very Much*) how much they would benefit from supports related to professional development (seven items), resources/print materials (eight items), and other miscellaneous supports (two items). All items had a range of four. As indicated in Table 11, teachers reported they needed the most professional development related to using *Foundations* with children with disabilities ($M = 3.96$, $SD = 1.07$), children who are dual language learners ($M = 3.93$, $SD = 1.12$), and families ($M = 3.84$, $SD = 1.05$). It is important to note that although these professional development needs were rated the highest, all professional development topics were rated toward the higher end of the five-point scale ($M \geq 3.67$), indicating that on average, teachers believed they would benefit from professional development around a wide range of topics related to *Foundations*. Several resources/print materials were also identified as being a highly needed supports including example activities for families that incorporate *Foundations* ($M = 4.16$, $SD = 0.90$), example lesson plans that incorporate *Foundations* ($M = 4.08$, $SD = 1.08$), and written resources that describe how to use *Foundations* with children with disabilities ($M = 4.04$, $SD = 1.02$), dual language learners ($M = 4.02$, $SD = 1.08$), and families ($M = 4.02$, $SD = 1.02$). Again, it is important to note that although these resources/print materials were rated the highest, all resources/print materials were rated toward the higher end of the scale ($M \geq 3.75$), indicating that on average, teachers reported that they would benefit a great deal from additional resources/print materials related to *Foundations*. Lastly, teachers rated how much they would benefit from other miscellaneous supports including financial support to attend *Foundations* training outside their center/program ($M = 3.94$, $SD = 1.26$) and

opportunities to work with other teachers to create lesson plans using *Foundations* ($M = 3.86$, $SD = 1.22$).

Additionally, teachers were asked to report any additional supports that would help them to use *Foundations* more effectively in their classroom. Seven teachers provided responses to this open-ended question. Responses included the need for more materials to use for planned activities, more planning time, and opportunities to observe other classrooms using *Foundations*. Several responses related to supports needed from others including encouragement/support from co-workers, assistance with lesson planning from center directors, mentoring and coaching specific to lesson planning, and support from other agencies (i.e., Smart Start and Child Care Resource and Referral Network).

Challenges/barriers to using *Foundations*. Teachers were asked to rate the degree to which nine items were challenges or barriers to their use of *Foundations* in the classroom (1 = not at all, 5 = very much). As shown in Table 12, lack of time to attend professional development related to *Foundations* was reported as the greatest barrier ($M = 2.46$, $SD = 1.27$), followed by lack of financial resources to attend professional development ($M = 2.35$, $SD = 1.34$), and no time to plan classroom activities using *Foundations* ($M = 2.35$, $SD = 1.38$). It is important to note that on average, all items were rated towards the mid to lower end of the scale ($M \geq 2.46$), indicating that teachers' found these items to be only *a little to somewhat* challenging to their use of *Foundations*. Lastly, teachers' open-ended responses were examined to identify additional challenges/barriers to *Foundations* implementation. Seven teachers responded to the open-ended question. Majority of responses related to challenges with using *Foundations* in addition to other resources/documents (e.g., assessments and curricula).

For example, one teachers wrote, “I mainly use Teaching Strategies Gold as a resource to plan, assess, and inform parents of children’s development, so I’m not always sure how to use it with *Foundations*.” Another teacher wrote, “We have so many resources we are supposed to use, so I can’t always use *Foundations*.” Other challenges or barriers that were identified included the need for more formal training at the beginning of the year and a lack of understanding about how *Foundations* applies to different topics.

Variations in professional development needs/supports by program sector.

In order to address RQ4a, Kruskal-Wallis analysis of variance (ANOVA) tests were conducted to determine if there were significant differences in teachers’ scores on the 17 items related to supports needed for *Foundations* implementation between three program sectors (i.e., Head Start, $n = 14$; public school, $n = 34$; and child care, $n = 61$). A Bronferroni correction was applied to the alpha levels to control for the possibility of a Type 1 error because of the number of tests used. Results indicated that mean scores were not statistically significant between groups for the 17 items related to professional development needs/supports (0.003 alpha-level).

Variations in professional development needs/support by professional development type. In order to address RQ4b, Kruskal-Wallis analysis of variance (ANOVA) tests were conducted to determine if there were significant differences in teachers’ scores on the 17 items related to supports needed for *Foundations* implementation between the three types of professional development groups (i.e., one-time training/workshop, $n = 34$; ongoing training series, $n = 38$; and technical assistance/coaching, $n = 38$). A Bronferroni correction was applied to the alpha levels to control for the possibility of a Type 1 error (adjusted alpha = 0.003). Distributions of

scores on the 17 items were not similar for all groups, as assessed by visual inspection of a boxplot. As shown in Table 13 the distributions of mean scores were statistically significant between groups for two out of 17 items. For statistically significant items, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p -values are presented.

No items related to professional development needs or miscellaneous other supports were significantly different across groups. However, two items related to resources/print materials were significantly different across groups. For these two items, the technical assistance/coaching group rated items higher (in regards to needed supports) compared to the other two groups. Results for these items are described in detail below. Scores for the item, *examples of activities for families that incorporate Foundations*, were statistically significantly different between the professional development groups ($\chi^2(2) = 14.60$, $p = 0.001$, $\eta^2 = 0.13$). This post hoc analysis revealed statistically significant differences in scores for this item between the one-time training/workshop group (mean rank = 44.13) and technical assistance/coaching group (mean rank = 69.87) ($p = 0.001$) as well as the ongoing training series group (mean rank = 51.30) and the technical assistance/coaching group (mean rank = 69.87) ($p = 0.02$). Scores for the item, *example lesson plans that incorporate Foundations*, were statistically significantly different between the professional development groups ($\chi^2(2) = 13.87$, $p = 0.001$, $\eta^2 = 0.13$). This post hoc analysis revealed statistically significant differences in scores for this item between the one-time training/workshop group (mean rank = 46.43) and technical assistance/coaching group (mean rank = 70.01) ($p = 0.002$) as well as the ongoing training series group (mean rank = 49.11) and the technical assistance/coaching group (mean rank = 70.01) ($p = 0.007$).

Results for two additional items were nearly significant. Scores for the item, *access to curricula aligned with Foundations*, were almost statistically significantly different between the professional development groups ($\chi^2(2) = 11.94, p = 0.003$). This post hoc analysis revealed differences in scores for this item between the one-time training/workshop group (mean rank = 46.94) and the technical assistance/coaching group (mean rank = 69.16) ($p = 0.006$) as well as the ongoing training series group (mean rank = 49.50) and the technical assistance/coaching group (mean rank = 69.16) ($p = 0.014$). Lastly, scores for the item, *a copy of Foundations*, were also almost statistically significantly different between the professional development groups ($\chi^2(2) = 10.89, p = 0.004$). This post hoc analysis revealed differences in scores for this item between the one-time training/workshop group (mean rank = 47.59) and the technical assistance/coaching group (mean rank = 68.42) ($p = 0.010$) as well as the ongoing training series group (mean rank = 49.66) and the technical assistance/coaching group (mean rank = 68.42; $p = 0.019$).

Interview and Document Review Results

The following section describes themes and commonalities in teachers' responses from interviews with nine teachers. Addressing research questions 1, 2, and 4, this section includes themes related to teachers' professional development experiences, how they use *Foundations* in their classroom and with families, challenges and barriers to using *Foundations*, and their professional development needs/supports. In some instances, documents that illustrate how teachers use *Foundations* will be provided as examples.

Professional development. In order better understand the types of professional development teachers had related to the revised *Foundations*, which was one of the

aims of RQ1, teachers were asked to describe their professional development experiences in more detail during their interviews. Specifically, teachers were asked to describe the type of training(s) they participated in, any follow-up (e.g., technical assistance, coaching, mentoring, participation in PLCs, etc.) they received after the training(s), and what they liked most about the training(s).

Type of training. Teachers who were interviewed had participated in different types of training. These teachers had often accessed one-time training including the *NC Foundations for Early Learning and Development* training offered by CCR&R agencies and another one-time training, described as a “train-the-trainer” that was based on the *NC Foundations for Early Learning and Development* training. Given that teachers included in the study were not a target audience for “train-the-trainer” professional development, this description suggested that perhaps the respondent was not clear on the type of training she had received. When asked to describe the format of the “train-the-trainer” session she said, “In each section of the book, she (the trainer) focused on each section on what it was about, how a teacher would use it, or a director in a center would use it, and then she told us how to train others. She broke it up into parts,” suggesting that the training she participated in was an in-depth review of *Foundations*. DPI’s on-going seven-module training series titled *Effective Teacher Practices for Supporting NC Foundations for Early Learning and Development* was another type of training that interviewees had participated in. Teachers described how the training was delivered by the public school system over the course of a school year, with a one-two day training at the beginning of the school year and the remaining modules delivered during one-day trainings throughout the remainder of the school year.

Follow-up after training. Teachers confirmed that it was common to receive some type of follow-up after their training, although the amount of emphasis on the use of *Foundations* varied. Teachers receiving services from the NC Pre-K EESLPD program indicated that their mentor teachers or evaluators emphasized *Foundations* to varying degrees. Anne, who was new to the EESLPD program, had only met with her mentor teacher on a few occasions. She indicated that her mentor teacher had only briefly discussed *Foundations* with her, but that she knew they would be discussing it more because she was required to include goals from *Foundations* on her lesson plans. Nina and Leah, who were also receiving services from the NC Pre-K EESLPD program, indicated that their mentor teachers and evaluators discussed *Foundations*, but they both wished for more support on using *Foundations*. For example, Nina said “She [mentor teacher] looks over my lesson plans and discusses *Foundations* with me, like, you should be doing this or you need to do this next or anything like that. Sometimes she’ll ask me, ‘Why did you choose that? How’s it align with *Foundations*?’ She’ll ask questions about it, but I wish she provided more suggestions on how to use it [*Foundations*] in the classroom.”

Teachers also received additional support for using *Foundations* through Professional learning communities (PLC) and mentoring from another teacher. However, the depth to which *Foundations* was discussed during PLC meetings varied. Donna and Amy both described how *Foundations* became an important part of their PLC meetings, particularly after they participated in a one of the seven-module trainings. For example, Donna said, “They would have like the big training. Then we would break down into smaller groups on another day [referring to PLC meetings]. We would talk about what are we were doin’ in our classroom with *Foundations*, and how this has helped us. What

more do we need?" For Donna, discussions about *Foundations* during the PLC meetings after each of the seven-module trainings were really helpful for both her and her fellow-teachers. It was an opportunity to reflect on how the information learned in the training related back to her practices in the classroom. It was also an opportunity to share with her PLC coordinator what additional supports she felt like she needed to use *Foundations* more effectively in her classroom.

For other teachers like Olivia, Nina, and Leah, *Foundations* did not seem to be an important part of their discussions during PLC meetings. Olivia said, "I think we briefly went over it [*Foundations*] in our next PLC after the training. We used to meet as a big group of PLCs and then break into smaller groups. This year, they left it all up to the teachers, so we just meet on our own once a month. We've reviewed it, but my director didn't do any follow-up on that." It is possible that teachers like Olivia would benefit from having a PLC coordinator/facilitator, who is experienced with *Foundations*, take a more active role in facilitating discussions about *Foundations* during these meetings. For Nina, *Foundations* was routinely discussed once a year at a PLC meeting, but not in great depth or as an intentional follow-up to *Foundations* training. Nina stated, "We do go over it [*Foundations*] some in the PLC. Not often and not in depth, but at least like once a year or so." Although these teachers regularly participated in PLC meetings, it was evident that they felt *Foundations* received limited emphasis.

Lastly, informal mentoring seemed to be a useful source of support for Amy, who met weekly with a more experienced teacher from a different classroom at her child care program. Amy described how she and the other teacher began getting together to work on their lesson plans and their mentoring relationship, which included support with using *Foundations*, developed naturally during their weekly meetings. She said, "She [her

mentor] knows so much about *Foundations* and she's a really experienced teacher and *Foundations* trainer so she helps me a lot. I can talk to her about my children and my lesson plans and she shows me how *Foundations* can help me." Amy spoke very fondly of her mentor, and it was clear their mentoring relationship was a great source of support in helping her learn to use *Foundations*.

Although many teachers were able to take part in some type of follow-up experience (e.g., technical assistance/coaching, participation in PLC meetings, and informal mentoring) after participating in *Foundations* training(s), it was not the case for some teachers. Rondell's experience highlights potential outcomes when teachers do not receive follow-up or support after training. She explained,

I think I really need more training or coaching or somethin'. It's been a while since I had it [one-time training] and I forgot a lot of it. The training I went to was like an overview, but then I didn't use it that much once I got back, so I've forgot a lot. No one talked to me about it. No one helped me use it. I just forgot. Maybe it would have been different if I had some help.

Most helpful/useful thing about Foundations training. The one-time training and DPI's seven-module training series are very different training approaches, therefore, teachers' responses about what they found most useful from these training experiences will be described separately, beginning with the one-time training. Teachers had very mixed feelings about the effectiveness or usefulness of the one-time training. For example, Anne and Rondell identified nothing useful about the training, although Anne was the most vocally disappointed about her training experience. There were several instances during her interview where she emphasized that she "got nothing out it [training]" and it was "a waste of five hours." When asked to elaborate on why she was disappointed with her training experience, she said, "There were issues with the trainer,

she was nice, but not able to effectively train.” She went on to say that the entire experience would have been better if she had a good trainer who could do a “better job teaching,” highlighting the importance for highly qualified and effective trainers.

Other teachers had very different impressions of their training experience and they were able to identify several useful aspects of the one-time training. Leah liked how her trainer went over the logistics for how *Foundations* was organized. She said, “Explaining that it goes from infants to older preschoolers and that there is a progression . . . and then you have the goals, and then you have the indicators and explaining all that to us. That was helpful.” Olivia liked how the training covered each domain in depth and provided activities teachers can do to support children’s learning across domains. Gail enjoyed the “hands-on activities” and meeting new people the most. She enthusiastically responded,

We had to break up into groups. Each time we did an activity from the training, she [the trainer] had us do separate, different groups, so we weren’t always stuck with the same people, and just getting up and moving around kinda just kept us active and eager to learn. It was a lotta hands-on stuff, so it was fun!

Teachers who participated in the ongoing training series also identified many helpful things about the training modules. Similar to the teachers who participated in the one-time training, these teachers’ responses also varied widely. For example, Nina who really enjoyed the training videos said, “They show a lot of videos with examples of what things should look like. Because I am visual, that was more helpful to me than anything. Just being able to see it in an actual classroom being implemented was helpful.” Amy and Ranae enjoyed learning about the logistics of *Foundations* and getting familiar with the book. Ranae emphasized how the trainer had participants put sticky notes throughout the book so it would be easier for her find the information she was looking

for. She said, "It helped me get familiar with the book and it's easier to use now that everything is labeled and I have tabs." Amy also indicated several additional aspects of the training that were useful including linking *Foundations* to teaching standards, having her teacher assistant present, and talking to and learning from other teachers. She said, "Discussing ideas with other people at a table and trying to figure different activities out. I like having those conversations with other teachers who are also using it." Lastly, Donna expressed that the most useful thing about the on-going training was that it showed how Social Emotional Foundations for Early Learning (SEFEL) and *Foundations* worked together. She said, "I think when they're breakin' it down to what the SEFEL is, and they're kinda combining it with *Foundations* to kinda show you how that it's working together . . . they'll talk about the goals that we're tryin' to meet in our *Foundations*, and the goals that we wanna meet in SEFEL, and how we work—blend 'em together to make 'em work."

It was interesting that teachers who participated in the one-time training and DPI's seven-module training series identified several different aspects of the trainings that they found to be the most helpful. This is perhaps indicative of teachers' unique approaches to learning or learning styles and/or teachers' level of proficiency with *Foundations*. It is possible that teachers like Gail and Amy are hands-on learners and/or social learners, therefore they noted working in groups and hands-on activities were the most helpful aspects of their training, whereas Nina, who identified herself as a visual learner, enjoyed the videos the best. Teachers' level of proficiency or comfort with using *Foundations* may also be telling. For example, Olivia, who is new to using *Foundations*, found that content-focused instruction and learning about the logistics of *Foundations* was the most helpful aspect of the training.

Using *Foundations* in their work with children and families. The primary aim of RQ2 was to learn about how teachers are using *Foundations*. During interviews, teachers described many ways that they used *Foundations* with children including: lesson planning, learning about children's development, setting up the learning environment, informing observations and assessments, and using it with children with disabilities and children who are dual language learners. Lastly, teachers described the ways they use *Foundations* with families. Each of these uses for *Foundations* will be further described.

Lesson planning. Similar to the quantitative results, the most *commonly* reported use of *Foundations* was lesson planning and all nine teachers indicated they used *Foundations* to some degree when lesson planning. At the lower end of the spectrum, teachers reporting limited use of *Foundations* during lesson planning. For example, Rondell said, "I use it some in my classroom when I plan my lessons, but I don't use it whole lot." At the higher end of the spectrum, teachers like Nina indicated they regularly used *Foundations*. She said, "I always use *Foundations* in my lesson plans. It's so important." At the highest end of the spectrum, Donna not only indicated that she always used *Foundations* in her lesson planning, but she also provided specific examples about how she was currently using *Foundations* for lesson planning that week.

While it is important to know *if* teachers use *Foundations* for lesson planning, it may be even more critical to understand *how* teachers think about and use *Foundations* when lesson planning. From teachers' responses, several themes emerged including teachers' process for using and documenting *Foundations* when lesson planning, the use *Foundations* to create lesson plans that meet the individual developmental needs of children, the use of multiple sources of data for lesson planning, and using *Foundations*

to ensure they are supporting children's development across all domains. These themes will be described in more detail and both quotations from teachers as well as examples of document evidences will be provided.

Teachers' process for using *Foundations* during lesson planning was fairly consistent among teachers. Most teachers described how they planned and documented their activities on their lesson plans first and then when back to see what goals and/or developmental indicators in *Foundations* the activities related to. Teachers either documented the abbreviated domain and goal number (e.g., HPD1 = Health and Physical Development, Goal One) or they documented the abbreviated domain, goal number, and developmental indicator (e.g., HPD1-a = Health and Physical Development, Goal One, Show interest in feeding routines). See Figures 2 and 3 for examples of lesson plans that document *Foundations* in these two formats. Donna and Gail described a more intentional process for using *Foundations* during lesson planning. Gail described how she reviewed *Foundations* to find activities to support specific goals for children's learning. She also reviewed *Foundations* after she finished lesson planning to document how her activities supported specific goals and developmental indicators within *Foundations*. Donna described how she reviewed the developmental continuum for specific goals and she used that information to plan activities that meet the needs of the children in her classroom. She stated, "I can kinda look at these goals, and kinda decide what I need to do to either gear up my lesson, or gear my lesson down."

There was a clear exception to the "plan lessons first and document *Foundations* goals and/or developmental indicators second" trend, and that was when teachers used *Foundations* to plan specific activities or make modifications to activities for individual children. The use of *Foundations* to create lesson plans that meet the individual

developmental needs of children was a prominent theme. Some teachers described their use of *Foundations* more broadly like Leah. She said, “I use it [*Foundations*] in planning everyday stuff and then also for their [children’s] individual goals as I get to know children, and I think about that when I write my lesson plans.” An example of how Leah included goals in her lesson plan can be found in Figure 3. On the lesson plan, Leah included children’s names and the specific developmental indicator she wanted to help each child work on that week. It should be noted that the lesson plan did not include specific activities or approaches Leah would use to help children work on each of the skills listed. Donna described how she used the continuum to identify children’s level of development and then used that information to ensure the activities in her lesson plans were developmentally appropriate for each child. She stated, “I would look at where the child was [she points to the developmental continuum in the *Foundations* book]. They may be a young pre-K’er, but developmentally they may not be quite there. They may be more on the toddler level. Then again, they may be more developmentally towards the older pre-K’er.” When referring to her lesson plans she stated, “I don’t wanna make it too big of a challenge because I don’t want ‘em to shut down. I do wanna challenge ‘em so that they keep building on the skills they have.” Lastly, Gail described how she used Teaching Strategies GOLD, a child assessment instrument, to create individual goals for children on her lesson plans. She would list goals from GOLD on her lesson plan and then write which *Foundations* goals coordinate with the GOLD goals. Regardless of how teachers documented planning for individual children on their lesson plans, it was evident that *Foundations* played a role in this process for many teachers.

Another commonality among teachers was the use of multiple sources of data/resources when lesson planning. Teachers described how they used their

knowledge of children in their classrooms (e.g., children's interests), assessment data, child observation notes, curriculum, and *Foundations* when writing their lessons. For example, Leah said, "I think of an activity, and then I use—I look in *Foundations*, and then I look in the curriculum that we use, which is Creative Curriculum, and I see which goals correspond to each other in *Foundations* and the curriculum. Those are my lesson plans." Later in the interview, Leah mentioned that she also uses her knowledge of children, "I just use what I know about the children—their interests and what they need to learn to guide what I plan." Ranae said,

I use it [*Foundations*] kind of as a way to develop activities or plans that will help the children developmentally. So I kind of use it on top of the Creative Curriculum and GOLD to kind of see what we should be working on and where the children should be developmentally. I use my child observations from GOLD as well as the Creative Curriculum first to do my lesson plans online. Then after I create my lesson plans I get *Foundations* and add those goals into my lesson plan.

It was evident that many teachers had developed a system to using multiple sources of data/resources for lesson planning. Although this is an excellent practice, it requires teachers to have a high level of understanding of child development, observation, curriculum, assessment, and early learning and development standards. It also requires teachers to have extensive amount of time to use these sources of data/resources for planning thoughtful, child-centered lesson plans on a weekly basis. Certainly not all teachers have reached this level of sophistication with lesson planning. For example, Olivia and Anne found all these sources of data/resources to be a source of confusion and even frustration. During their interviews, they often made comments in which they confused Teaching Strategies GOLD, *Foundations*, Creative Curriculum, and even the Early Childhood Environmental Rating Scale (ECERS). For example, when describing what data sources/resources she used for lesson planning, Olivia said,

“forgive me if some of this stuff runs together with ECERS and some of the other—but we record all of the children using their portfolios, so we have anecdotal notes, work samples, pictures and reading logs, everything that we keep on every child for data reporting. Like I said, sorry if I get some of it confused cuz with the GOLD strategies and the *Foundations* and the ECERS it runs together.”

The final lesson planning-related theme to emerge was teachers sometimes used *Foundations* to ensure their lesson plans would support children’s development across all domains of learning. Several teachers mentioned that they used *Foundations* to ensure that they are planning activities that support children’s development in each of the five domains found in *Foundations*. For example, Nina explained, “I generally plan the activities first and then look at *Foundations*, but like I said, if I do notice that I didn’t plan anything for like Approaches to Learning, then I might cut out an activity and replace it with something else or add a new one. I found that generally I usually have all of them [domains] covered.” Amy, who also used and documented *Foundations* in her lesson plans, indicated that at least one goal from every domain had to be present in her lesson plans. For these teachers, addressing all five domains in their lesson plans was an important process for ensuring they were supporting children’s holistic development across domains.

Learning about children’s development. In addition to using *Foundations* specifically for lesson planning, some teachers also used it to learn about child development. For example, Amy described how she had always worked with older preschoolers (four- and five-year-olds), but this year she began working with younger three-year-olds. She described how *Foundations* has been useful for learning about developmentally appropriate expectations for younger three-year-olds. When probed to

describe how she used *Foundations* to learn about child development, she responded, "Probably just knowing where the kids are right now. Like with this younger group, knowing, okay, this is normal for them; they don't need to be doing this." Other teachers also mentioned that they used *Foundations* to learn about children's current level of development and gain an understanding of what comes next. Then, they used this information in various ways such as planning activities and setting up the classroom to support children's development. For example, Anne said, "Having the indicators to know what I should be looking forward to with children's development and I get ideas as to what they need in the classroom and what I can do to help them."

Setting up the learning environment. Setting up the learning environment was another use for *Foundations* that was described by teachers. For example, Gail said, "I've used it for setting up the classroom and things like that." Donna and Nina provided a more detailed explanation about how they used *Foundations* to set up their classroom learning environment. Nina focused on how she used *Foundations* to plan her learning centers and add new materials. She said, "I definitely use it [*Foundations*] if I'm planning my areas, like my learning centers. Dramatic play, I like to bring other materials in, and then the block center. I guess my interest areas, per se. I think about the materials that are in there. I try to think of things that I can pull in that might meet their levels and the way that they're planned out in *Foundations*." Donna specifically focused on materials that she added to the classroom to help children develop fine motor skills using *Foundations* as a resource. She said, "Like right now we're struggling with cutting. It's the beginning of the year, they're struggling with the holding the scissors and the pencils. You're working with these fine motor skills to develop them even as far as doing your Play-Doh, or just cutting paper, not really cutting a certain shape. Then with your

Foundations, you're looking at what do you need. What materials would we need to help them build their fine motor skills?" For both of these teachers, *Foundations* was a useful tool for planning their learning centers and ensuring they were providing materials that supported children's development.

Informing observations and assessments. Teachers also described how they systematically used *Foundations* to inform child observations and assessments. For example, Nina described how she used *Foundations* to create her own checklists and Leah created anecdotal observation records that aligned with *Foundations*. Both of these teachers described how they used these self-made tools when observing children to collect data, so that this information could inform child assessments. Each of their processes is described below in more detail.

Nina created her own checklists using *Foundations* and Teaching Strategies GOLD. She said, "I actually have some checklists and things I've made for different areas of development, like it might be broken down instead of cognitive I might have like a math checklist, a literacy checklist. I have pulled things out of *Foundations* and put them on my checklist. Then I'll also use the creative curriculum [Teaching Strategies GOLD] assessment on my checklists." Nina goes on to explain that while she believes Teaching Strategies GOLD and *Foundations* are closely aligned, there are some areas of learning or skills that are identified and more specifically described in *Foundations* when compared to Teaching Strategies GOLD. She explained,

I think that they're well aligned, but maybe in some of the areas, like Approaches to Learning, they're not—*Foundations* is more detailed than Teaching Strategies [GOLD]. Teaching Strategies [GOLD], sometimes it's more of a checklist. I think it's more vague, whereas I can go to *Foundations* and it actually gives—it explains what you should be looking for.

She went on to describe how she used these checklists when completing child assessments in Teaching Strategies GOLD.

While Nina created checklists, Leah used *Foundations* to create a tool to help her collect anecdotal observations for children in her classroom (see Figure 4). As shown on the anecdotal record sheet, Leah identified both goals from Teaching Strategies GOLD (labeled as Creative Curriculum) and *Foundations* that align with each child observation. Although Figure 4 specifically included observations for the Emotional/Social domain, Leah described how she had observation sheets for all five domains identified in *Foundations*. She explained how she reviewed anecdotal record sheets and used the information to complete child assessments in Teaching Strategies GOLD. She explained, "Now I can go back and look at the *Foundations* goal and the Creative Curriculum goal [Teaching Strategies GOLD goal], read the anecdotal note and read more than one, obviously, and I can say, 'Okay, that child has mastered that'. We can move on and see where it stops. Then I know what we need to work on." Although Nina and Leah had developed different tools using *Foundations* to help them collect child observation data, they were both able to utilize this information to complete child assessments.

Using Foundations with children with disabilities. Several teachers indicated that they used *Foundations* to support their work with children with diagnosed disabilities. Four themes that emerged from teachers' responses included: 1) using *Foundations* to understand the individualized development of children with disabilities 2) using knowledge of children with disabilities to make adaptations/modifications, 3) using *Foundations* to communicate with others, and 4) using *Foundations* to develop goals for children with disabilities. Each of these themes will be further described.

One of the themes to emerge was the use of *Foundations* to learn about the individualized development of children with disabilities. Nina explained, "Where it's broken up into the ages [*Foundations*], I can actually look back at where they [children with disabilities] should be and where they are and what they've done to get there. That kind of gives me a better idea of their span of development." Amy used *Foundations* in a similar way as Nina, but in addition to this, she highlighted that children's development could be different across domains. She said, "I mean just knowing where they are developmentally. I've just got some children with more mild to moderate delays. Some of them, their cognitive level may be down lower to the toddler or two range, but some of them may be up in the three, four range. You know it also depends on the domain. They can be at a different level depending on what domain I'm looking at. I use *Foundations* get a better idea of the development of children with disabilities." Not only did Amy explain how she used *Foundations* to learn about the individualized development of children with disabilities, she noted that children's development could be incongruent across domains.

Armed with knowledge of children's individualized development, teachers were able to use this information to differentiate instruction as well as make modifications/adaptations for children with disabilities. Nina explained, "I think that helps me plan, like what I actually—the activities I need to do with them. Seeing I need to get them here, it helps me plan for that." Nina also described how she used the teaching strategies in *Foundations*, and she found the notes for children with disabilities to be really helpful. Donna, who also used *Foundations* for this purpose, explained that she had to add different materials to her classroom to support the development of two children with disabilities in her classroom. She said, "They're probably two-and-a-half to

a three-year-old level. So I brought in some different toys, I guess you would say—not really toys, but some different things for them because they may need more of the—the puzzles, they may need a handle on the puzzle, and a simpler, three-piece puzzle instead of the regular pre-school age puzzles. I'm lookin' at some of where they're at to decide what I really need to bring in for them to use." So in this case, Donna used her knowledge of these children's fine motor development to add materials that would support their development of fine motor skills. In these examples, teachers highlighted how *Foundations* helped them understand the individualized development of children with disabilities and how his information could be used to modify lesson plans and select developmentally appropriate materials.

Another theme to emerge was the use of *Foundations* to communicate with others who work with children with disabilities, such as therapists and kindergarten teachers. Leah explained, "I always try to communicate with whoever's working with them [children with disabilities], whatever goals they're working on, and I try to make sure that I'm helping with that." Gail specifically mentioned that she shared *Foundations* with therapists who work with children at the developmental day center where she was employed. She said, "We, of course, have a lot of therapists coming in and out here, and we—I've showed 'em the book. I've showed 'em where it's at. I've told 'em it's a great tool that I use in the classroom, so if they wanna—if they're interested, just to let me know." Gail also described how she used *Foundations* to communicate with kindergarten teachers during transition meetings. Even though Gail seemed very eager to share *Foundations* with individuals working with children with disabilities in her classroom, she appeared discouraged that therapists and kindergarten teachers were unaware of *Foundations*.

Lastly, a few teachers used *Foundations* to help write Individualized Education Program (IEP) goals. Amy explained, "Some of the kids come to me with the IEPs already written and sometimes I have to write their goals. I use *Foundations* to help me write some of their IEP goals." Gail not only described how she used *Foundations* to write IEP goals, she also used it for children's transition meeting for kindergarten. She said, "Yes, yes, especially during the transition meetings, with me leading the pre-K classroom, I do have to do transition IEP meetings for kindergarten, and so it's [*Foundations*] come in very useful for developing goals for the children going into kindergarten." Furthermore, Gail described how she used *Foundations* to develop service plans for children with disabilities at her center. She explained,

Service plans are for our children who have IEPs, but because we do before- and after-care and summer care for those children, we set goals for them, as well, that had to be different from their IEP goals. The *Foundations* book comes in really handy on just somethin' different other than what their IEP goals state that they need help—you know, just general goals.

Gail exemplified how teachers could use *Foundations* to develop individualized goals for children with disabilities.

Using Foundations with dual language learners. Nina was the only teacher who used *Foundations* to support her work with dual language learners in the classroom. The two primary ways she used *Foundations* was to learn about the developmental sequence or stages of language acquisition for dual language learners and to and identify specific strategies/modifications to support their language development. When probed to elaborate on how she used *Foundations* to support her work with dual language learners, she opened the *Foundations* book to page 151 to show me a table titled "Dual Language Learning Stages and Suggestions for Teaching Strategies."

Pointing to the chart she said, "Sometimes I refer to the stages in here. That kind of helps me understand what I need to do. I can come in and look up where it has 'what does it look like in children?' I can actually come in here and figure out what stage they're in and then kind of see what I need to do." She goes on to explain why she believes this chart is more useful than the English language acquisition goals from the Teaching Strategies GOLD assessment tool. She said,

I think this chart is more helpful than the one in Teaching Strategies GOLD, to be honest. It's a little bit more vague [referring to Teaching Strategies GOLD]. You can mark and kinda see what stage they're in, but I feel like it [Teaching Strategies GOLD] doesn't give enough suggestions on what I can do to help them get into the next stage.

Further illustrating this point, Nina went on to describe how she used *Foundations* to identify strategies to support dual language learners in her classroom. She pointed again at the chart on pg. 151 in *Foundations* and said,

I definitely use some of these, like encouraging smaller groups. I've gone through and labeled items in Spanish. We have Spanish and English labels. I've been able to do some of the other things like the picture schedules. It's helped me at group time, to think of activities we can do to support their language, like using things that are more predictable or repetitive. That way, they're hearing the same things over and over and it's easier for them to pick up the English.

Although Nina was the only teacher using *Foundations* to support her work with dual language learners, she provided some rich illustrations of ways *Foundations* could enhance teachers' knowledge of dual language learning as well as provide strategies to support dual language learners' development.

Using Foundations with families. Teachers also used or shared information about *Foundations* with families. The two primary ways teachers described using

Foundations with families included: 1) sharing information about their child's development and 2) addressing families' concerns about their child's development.

The first way teachers used *Foundations* with families was to share information about their child's development. For example, Nina said, "Parents want to know where their child is and where they're going next. I use *Foundations* to show the sequence of development." Amy described in detail how she shared information with families about their child's development. She said,

I can show families through the book [*Foundations*] too as like, 'This is what they're doing now and this is what we would like to see.' Like I'll say, 'We use *Foundations*.' 'Well, what is that?' I had the book. It's very easy to get to. I pull it out and I show them. It just says this is where the child is and these are the next steps. Not that it's an assessment of any kind or saying that your child's behind. It's just saying this is where they are, this is where we're trying to get them to be.

For Nina and Amy, *Foundations* was a useful resource to share information about children's development with families.

The second way teachers used *Foundations* with families was to address their concerns or questions about their child's development. For example, Nina said, "Sometimes they [families] do come to me and they have a concern . . . I had a parent last week say, 'I've noticed my child's not focusing or paying attention.' Then we sat down [to] look at *Foundations* together." Using fine motor and language development as examples, Donna described how she used *Foundations* to address families' concerns. She said,

If you have a child, and a parent's concerned about their development, or their speech, or something, or if they're worried about their fine motor skills—they're not holdin' a pencil right, or they're not makin' these sounds right—then we can go, and we can look in the *Foundations*, and say, 'Well, they're fallin' right where they need to be. This is developmentally appropriate for their age.'

Although there are many additional ways teachers' can use *Foundations* with families, using it to discuss child development and address families' concerns were most notably highlighted by teachers.

Challenges/barriers to using *Foundations*. Teachers also identified challenges or barriers they faced in regards to understanding and being able to use *Foundations*, which is related to RQ4. Several themes emerged from interviewees including: 1) limited time to use *Foundations*, 2) lack of training, 3) limited access to *Foundations*, 4) lack of support from others, and 5) *Foundations* is not user-friendly.

Limited time to use Foundations. The most commonly reported barrier or challenge was time to use *Foundations*. Nina expressed this most eloquently when she said, "I think sometimes it's just the time. I mean, obviously it's wonderful to use *Foundations*, but sometimes it can be very time consuming to go through each domain and each area and find the strategies that you need. I think that's probably the biggest challenge for me." It struck me those teachers who said time was their biggest challenge almost always followed their comment with a laugh. As anyone who has ever been an early childhood teacher can attest to, time is a great commodity, and there never seems to be enough time in the day to fulfill all the demands of being a teacher. Although these teachers laughed about always needing more time in their day, it was obvious that this was a serious concern, particularly if they wanted to use *Foundations* as well as other resources/sources of data to plan enriching learning experiences for young children.

Lack of training. Another challenge reported by several teachers was a lack of training. For example, Olivia stated, "I guess just getting more trainings so that I know how to use it in my classroom or to incorporate it." Rondell also expressed that she wanted more training, particularly since her first training on *Foundations* was a negative

experience. Although these teachers had received some training on *Foundations*, they both felt like they didn't know enough to be able to use *Foundations* effectively in their classrooms or with families.

Limited access to *Foundations*. Anne and Olivia, who were both new to using *Foundations*, indicated that getting access to the document was a barrier. Anne explained that she had to print *Foundations* herself and she was upset about this financial burden. Olivia described how her center only had one copy of *Foundations* and that copy had to be shared between all the teachers at her child care center. She described how she really wanted to use *Foundations* more, but not having her own copy was a serious hindrance as well as a source of frustration. She said, "It'd be helpful to have our own book in the classroom ... we have one for the whole center, so somebody else might be using it for—a lot of us are in school, so maybe something they're doing with school, or something they are doing in the classroom. I have to wait until it's available. I think that would be the biggest thing is just maybe everyone having their own copy."

Lack of support from others. Interestingly, Anne and Leah, who were both receiving technical assistance/coaching from the EESLPD office, indicated that getting support from others was a challenge. Leah said, "Probably not enough support from others. I'm willing to learn, and I do a lot on my own, but I also need to be pushed. My supervisors here don't push me. I get it from my evaluator [NC Pre-K EESLPD Evaluator]. She pushes me, but not specifically on *Foundations*." This may indicate that not only do some teachers need more support, they may also benefit from being held accountable or being gently nudged to use *Foundations* more in their classrooms.

Not user-friendly. Lastly, a few teachers indicated that *Foundations* was not “user-friendly.” Nina stressed how much time it took her to flip through the book and find what she was looking for. During the interview, it was noted that Nina had made her own tabs in *Foundations* using sticky notes so she could find what she was looking for with more ease, but even with her sticky-note system, finding what she was looking for was still a challenge. She wished for a condensed version of *Foundations* that she could use as a quick reference. She said,

Maybe a more, I don't necessarily wanna say condensed, but maybe like a condensed reference sheet or something you could refer to so that you're not flipping through the book and trying to find the page. Maybe it could be like a quick reference sheet that you could look at. Then when you need a more in-depth strategy or something, you can look in the book at the strategies.

Although Nina had taken the time to label/tab her copy of *Foundations*, other teachers' may not do this for many reasons. For instance, if teachers are sharing copies of *Foundations* or accessing it online, they may not be able to add a labeling system.

Professional development needs/supports. Lastly, teachers discussed professional development needs or other supports/resources that would help them to use *Foundations* more effectively, which was also related to RQ4. Broad themes, which included the need for more training and technical assistance/coaching will be explored. This will be followed by a discussion of less common professional development needs and resources that were identified by only a few teachers.

Training. All nine teachers identified additional trainings as a professional development need. Some teachers were fairly broad in their responses about their training needs. For example, Anne said, “It would be nice, I guess, getting some more training on it [*Foundations*].” Olivia said, “I guess trainings on how to incorporate it

[*Foundations*] and use it in the classroom.” Other teachers identified specific areas or topics related to *Foundations* such as using *Foundations* to develop activities/plan lessons. Gail said, “I would say getting more specific about how to use it with lesson planning, instead of using it as a checklist, but rather as a resource.” Several teachers wanted training about sharing *Foundations* with families. For example, Leah said she would benefit from, “going through each section of the book and being given examples of how to implement it [*Foundations*] in your classroom and with your families.” Another training topic identified by Gail was learning to use *Foundations* to help with observations and documentation. Lastly, Nina, who was the only teacher using *Foundations* to support her work with dual language learners, wanted to have specific training on how to use *Foundations* for this purpose.

Although teachers identified several training needs, one thing was clear throughout their responses and that was the desire for more *in-depth* training. For example, Leah said, “I wanna learn how to use it more for specific reasons instead of just general ways.” Nina said, “I feel like all the ones [trainings] I’ve been to, have been pretty vague ... most of the ones I’ve been to have been on the five domains, this is what they are, this is what they look like. Let’s look at what’s within each one. There’s never necessarily been one [training] that’s like this is an activity you can do to support this domain or this area. I think something like that probably would be a little more helpful.” Teachers’ responses clearly indicated that they were ready for training that went beyond an overview of *Foundations*. Teachers were eager for training on how to use *Foundations* for more specific purposes in the classroom and with families.

Some teachers also indicated that it would be helpful if other trainings (on topics not specific to *Foundations*) related back to *Foundations* or were blended with

Foundations. For example, Leah said, “It would be nice if during other trainings that I have them showing how they relate to one another and showing how, Okay, what we’re doing right here, what we’re teaching you is linked with *Foundations* right here. That would be nice and to be reminded all the time ‘cuz it’s—most of the stuff in this book you do on a daily basis, but you can do it with a purpose and do it better if you know exactly how it relates to what you’re doing.” Teachers like Leah want to be able to see how *Foundations* is related to other topics and other aspects of their work, so that they can be more intentional about how they use *Foundations*.

Technical assistance/coaching. In addition to training needs, several teachers said they would benefit from technical assistance/coaching related to *Foundations*. Some teachers specifically wanted to receive more support from their program administrators or supervisor. For example, Ranae said, “Yeah, I mean we have someone that approves our lesson plans and she [her supervisor] looks at them but she hasn’t really followed through to say that we have to—like that *Foundations* needs to be in there so I think we’ve just kind of said that we’re using *Foundations* as a guide but no one’s really taught us how to really use it and no one gives us feedback or makes sure we’re using it. It would be helpful if I got that from my supervisor.” Olivia explained, “She [her supervisor] has to observe us for the NC pre-K, so maybe giving us pointers after she observes, and what things that she could see that *Foundations* would help us in the classroom.” It was evident from teachers’ responses that they were using *Foundations* to the best of their abilities, but most believed they would benefit from receiving technical assistance/coaching from someone with expertise on *Foundations*.

Even teachers like Nina and Leah, who were receiving technical assistance/coaching from their mentor teacher and/or evaluator as part of the NC Pre-K

EESLPD program, both said they wanted more specific feedback and support related to using *Foundations* in the classroom. For example, Nina said, "I don't know if coaching would be the word, but maybe she [mentor teacher] could come observe or look and say this is maybe something that you could do to incorporate it [*Foundations*] more." Leah stated, "Just checking to see how we're using it and then maybe helping us take another step, like, 'Okay, maybe you're using it this way, but how could you use it for your dual-language learners or your English language learners?' or, 'Okay, now how could you use this with families?'" Nina and Leah's experiences highlight the importance of making the most of teachers' access to technical assistance providers.

Other needs/supports. Although training and technical assistance/coaching were the two most commonly identified professional development needs, some teachers had suggestions for other supports and resources that would help them to use *Foundations* more effectively. These other supports included specific materials/resources as well as opportunities to learn from other teachers. For example, Leah suggested that she would benefit from more time talking to and learning from other teachers. She said, "I'd love to see how other teachers are using it and specific ways they're using it other than just for their notes and planning activities." Donna wanted to have access to more activities based on *Foundations* goals. She said, "I think it would be good if this [*Foundations*] had more activities related to those goals." She went on to talk about how she can find activities related to Teaching Strategies GOLD assessment goals online and she wished that *Foundations* had something similar to this. Lastly, Amy wanted a quick reference sheet that showed the alignment between creative curriculum and *Foundations*. She said, "I think being able to show how it [*Foundations*] aligns with Creative Curriculum more and how it's listed, like have just a sheet or maybe two, not a

whole lot of papers to have to keep track of, but just a little checklist or something, this is how they combine together or match each other."

Several themes and commonalities in teachers' responses related to their professional development experiences, how they use *Foundations* in their classrooms and with families, as well as challenges and barriers to using *Foundations* have been presented. Now the results chapter will conclude with findings related to the secondary component of the study.

Secondary Component

RQ5

As part of the secondary component of the study, the sample included early childhood education (ECE) professionals who completed the short electronic survey. The results for RQ5 will begin with general information regarding ECE professionals' familiarity and use of different versions of *Foundations*. Next, information regarding participants' access to *Foundations* will be provided, followed by participants' engagement in training related to *Foundations*. Lastly, participants' self-reported barriers to using *Foundations* will be examined.

Familiarity and use of *Foundations*. Participants were asked to report the versions of *Foundations* they were familiar with as well as the versions of *Foundations* they use in their work. Three-fourths (74.4%; $n = 87$) of participants were familiar with the original *Foundations for Preschoolers* (NCDPI, 2005), 62.4% ($n = 73$) were familiar with the original *Foundations for Infants and Toddlers* (North Carolina Infant and Toddler Early Learning Guidelines Task Force, 2007), and 84.6% ($n = 99$) were familiar with the revised *Foundations* (2013). Only a small number of participants (2.6%, $n = 3$) had never heard of *Foundations*. Participants were also asked to report which versions of

Foundations they currently used in their work. It is important to note that participants could select more than one version of *Foundations*. The majority of participants (77.8%; $n = 91$) reported that they used the revised *Foundations* (2013), 13.7% ($n = 16$) used the original *Foundations for Preschoolers* (NCDPI, 2005), 8.5% ($n = 10$) used the original *Foundations for Infants and Toddlers* (North Carolina Infant and Toddler Early Learning Guidelines Task Force, 2007), and 12% ($n = 14$) reported that they did not use any version of *Foundations*.

Access to *Foundations*. The majority of participants (84.6%, $n = 99$) indicated they had a copy of the revised *Foundations*. Out of the participants who indicated they received a copy of *Foundations*, 92 provided information about where they received their copy. Out of these participants, 27.2% ($n = 25$) received their copy from the Division of Child Development and Early Education (DCDEE), 23.9% ($n = 22$) from a supervisor, 16.3% ($n = 15$) from a training/workshop, 10.9% ($n = 10$) downloaded it from online, and 5.4% ($n = 5$) from Child Care Resources Incorporated. The remaining 16.3% ($n = 15$) were classified as “other.” Some of these “other” responses included the NC Head Start Collaboration Office, Partnerships for Children, Institutions of Higher Education, and Child Care Services Association to name a few.

Participation in *Foundations* training. Only half (50.4%, $n = 59$) of ECE professionals indicated they had participated in training related to the revised *Foundations*. Of those that did participate in *Foundations* training, on average they engaged in 1.28 ($SD = 0.53$) types of training. The majority of ECE professionals (74.6%, $n = 44$) only participated in one type of training related to *Foundations*, 22.0% ($n = 13$) participated in two types of training, and the remaining teachers (3.4%, $n = 2$) engaged in three types of training. On average, ECE professionals who had received

professional development reported that they received 9.11 hours of training related to *Foundations*. The number of hours of training reported ranged from a minimum of two hours to a maximum of 60 hours with a standard deviation of 11.28.

As shown in Table 14, out of the ECE professionals who received some type of training related to *Foundations* ($n = 59$), over half (52.5%, $n = 31$) participated in the *NC Foundations for Early Learning and Development* training offered the Child Care Resource and Referral Network for 0.5 CEUs. Approximately 27% ($n = 16$) of ECE professionals participated in at least one module of DPI's seven-module training series titled *Effective Teacher Practices Supporting NC Foundations for Early Learning and Development*. A smaller number of participants received training related to *Foundations* during an in-service training at their place of employment (16.9%, $n = 10$) or at the *It Starts with Us: Solid Foundations, Successful Futures* conference (10.2%, $n = 6$). Almost a fourth of ECE professionals (22.0%, $n = 13$) identified other types of training opportunities such as courses offered at institutions of higher education, train-the-trainer sessions, and workshops at conferences.

Lastly, participants were asked to rate on a five-point scale (1 = not at all, 5 = very much) the extent to which they believed they would benefit from additional support/guidance related to understanding and using *Foundations*. Only 5.1% ($n = 6$) of ECE professionals responded *not at all*, 14.5% ($n = 17$) responded *a little*, 20.5% ($n = 24$) responded *somewhat*, 26.5% ($n = 31$) responded *a lot*, and 30.8% ($n = 36$) responded *very much*. The remaining 2.6% ($n = 3$) did not respond.

Challenges/barriers to Foundations implementation. ECE professionals were asked to rate the degree to which nine items were challenges or barriers to their use of *Foundations* in their work (1 = not at all, 5 = very much). As shown in Table 15, on

average, limited awareness of trainings on *Foundations* was the greatest challenge to using *Foundations* ($M = 2.46$, $SD = 1.35$), followed by lack of time to attend professional development related to *Foundations* ($M = 2.33$, $SD = 1.28$), lack of financial resources to attend professional development ($M = 2.32$, $SD = 1.39$), and lack of available professional development related to using *Foundations* ($M = 2.29$, $SD = 1.33$). It is important to note that on average, all items were rated towards the mid to lower end of the scale ($M \geq 2.46$), indicating that ECE professionals found these items to be only a *little to somewhat* challenging to their use of *Foundations*.

Lastly, ECE professionals' open-ended responses were examined to identify additional challenges/barriers to *Foundations* implementation. Approximately a fourth of participants (25.6%, $n = 30$) provided responses. Five themes in ECE professionals' responses were identified which included training issues, access to *Foundations*, lack of "buy-in," usability of the document, and limited understanding about the relationship between *Foundations* and other resources/documents. Each of these themes are described in more detail below.

Training issues. The majority of barriers/challenges to using *Foundations* identified by ECE professionals' related to training issues. Three respondents indicated that they were waiting on *Foundations* training. One person wrote, "We were told to wait to do the new *Foundations* training until it was offered through the EESLPD teacher calendar as our teachers would have to repeat the training if they choose to attend at our local Smart Start Partnership." Another person indicated that they were planning an agency-wide *Foundations* training the upcoming year. Three other ECE professionals' comments related to limited access to trainings and train-the-trainer sessions. One person wrote, "The availability and publicity for *Foundations* training is very limited." The

person goes on to suggest that the training be available online or through webinars to increase accessibility. Another person wrote, “The NCFELD Train-the-Trainer is no longer available so it’s hard to share that information with the child care staff.” More opportunities for train-the-trainer type sessions will help spread the word and benefits of NCFELD.” Resources and time to attend trainings was also a challenge identified by three respondents. One director wrote, “We know that it is greatly important, but it’s difficult to help staff attend trainings and see how to integrate [*Foundations*] into their daily work because of time and resources needed to send staff to training.” Another person wrote, “Each presenter in my area charges a different fee to attend workshops and there usually held during daytime hours when I’m needed in my classroom.” Two respondents commented on challenges related to training new staff due to teacher turnover. One person wrote, “We are constantly having to “re-train” teachers on how to use NC FELD to create developmentally appropriate activities due to high turnover.” Lastly, an ECE professional noted that knowledge of trainings was a challenge/barrier. This person wrote, “I was unaware that there were training modules as listed above and would be very interested in learning more about those modules.”

Access to *Foundations*. Another highly identified barrier/challenge to using *Foundations* is access to the document. Three trainer/technical assistance (T/TA) providers indicated that not having copies of *Foundations* to distribute is major challenge. One T/TA provider wrote, “I use the NCFELD in all my trainings with child care programs and providers and I only have one book to use. I need several copies of the document to help promote the use of it.” Additionally, three ECE professionals working in higher education echoed this challenge. One faculty member wrote, “Students enrolled in Early Childhood Education programs need a personal hard copy of the

Foundations document.” Access to the document is also a concern for teachers, one of which voiced,

I do not have a copy of *Foundations*. If I have access to a book, I'm unaware of it. “How can I be expected to use it when I don't have it!” Another teacher noted the challenge with only having one copy of *Foundations* at her center. She said, “Sharing one book with other classrooms is tedious at best!”

Several ECE professionals recommended that more copies be printed and distributed.

For example, one faculty member wrote,

I do not understand why another printing has not already happened. In addition, I feel that every person in NC who works with young children or are in preparation programs to do so, need a copy of *Foundations* at no cost! This document is an extremely valuable resource and students should not have to sacrifice to afford a copy.

Another person recommended that the book be made available to purchase at a reasonable cost.

Lack of “buy-in.” One of the barriers/challenges mentioned by several respondents related to a lack of “buy-in.” For example, two technical assistance providers wrote, “the lack of administrator commitment to using *Foundations* and teachers’ reluctance to using the tool in their planning is problematic” and there is a “lack of education and understanding of providers on why *Foundations* is important to the field.” Technical assistance providers weren’t alone in their concern with ECE professionals’ “buy-in.” One center director commented, “The lack of my center wanting to use *Foundations* to help promote developmentally appropriate practices is a challenge.” Another center director wrote, “They [teachers] do not understand anything about *Foundations*, what it is, how it is helpful and that they should be using it. They see it as ‘another thing to take up time’ and get nothing from it.”

Usability of *Foundations*. Another theme in ECE professionals' responses was issues related to the usability of the revised *Foundations*. One person wrote, "It is very time consuming to look up things in *Foundations*. It would be nice to have it condensed or more user-friendly." A teacher commented on the lack of teaching strategies for families in the revised *Foundations*, a resource that was present in the original *Foundations*. This teacher wrote, "The original *Foundations* had strategies for providers and strategies for families. However, this new *Foundations* only has strategies for providers, therefore I refer to the original *Foundations* for those strategies when planning and compiling my reports for parent conferences. It takes a lot of time to use both *Foundations*. I wish it was all in one document."

Understanding the relationship between Foundations and other resources/documents. Four ECE professionals' comments made it clear that another challenge/barrier to using *Foundations* includes understanding how it relates to other resources/documents such as curricula and assessments. This concern is echoed in comments such as, "I need more awareness on connecting *Foundations* to Creative Curriculum" and "I need to understand how *Foundations* aligns with other curriculum documents so I can use it in lesson planning on a daily basis." Other comments indicated that individuals were somewhat unclear that *Foundations* is not an assessment tool or curriculum. For instance, one person wrote, "*Foundations* is an excellent professional resource, but the center I worked in already used Creative Curriculum and Teaching Strategies for assessments and portfolios." Another person commented, "*Foundations* is a great tool and should be the curriculum model for NC. The problem is that we have to use a state-approved curriculum, which we have trouble finding training for, and it ends up being our focus because it is required."

Conclusion

Research findings have been presented for both the primary and secondary components of the study. In summary, results from the primary component suggest preschool teachers are engaging in a wide variety of professional development related to *Foundations* and use standards for many purposes in their work with children and families. As suggested in the secondary component of the study, many ECE professionals across North Carolina are familiar with *Foundations*, but fewer are engaging in professional development related to ELDS. In the next chapter, a discussion of results as well as recommendations will be addressed. Lastly, strengths and limitations to this study as well as future research directions will be explored.

CHAPTER VII

DISCUSSION

Taken together, the quantitative and qualitative results provide a comprehensive view of ELDS professional development and implementation in North Carolina. In the primary component of the study, the quantitative results provide much needed descriptive data about preschool teachers' engagement in *Foundations* professional development as well as challenges and barriers to using standards. It also provides data concerning whether preschool teachers are using Foundations for specific purposes. The qualitative data paints a more vivid picture of *how* teachers are using *Foundations* and their personal experiences with professional development. The quantitative data from the secondary component of the study offers a bird's eye view of ELDS implementation across the state with early childhood professionals.

The following discussion will focus on the results found for each of the research questions using both quantitative and qualitative methods when applicable. Potential explanations for findings will be discussed using both previous literature as well as the bio-ecological theory. Furthermore, comments and explanations for results provided by the Community Research Implementation and Design Team (CRDIT) will be provided. Next, I will offer recommendations for professional development, *Foundations* resources, and policy implications for ELDS implementation. Finally, I will conclude with a discussion of the strengths and limitations in the current study, as well as directions for future research.

Participation in *Foundations* Professional Development (RQ1)

The aim of RQ1 was to learn about the types and amount of professional development opportunities teachers have had in the last year related to the revised *Foundations* and to see if there were variations in professional development participation by program sector. From the quantitative and qualitative results, it was determined that there were differences in professional development engagement by program sector as well as variation in the degree to which technical assistance/coaching focuses on *Foundations*. Additionally, there were also specific aspects about trainings that interviewees identified as being the most useful and/or helpful. These findings will be elaborated on in more detail in the following section.

Variations by Program Sectors

The quantitative results revealed that there were differences in professional development engagement by program sector. Overall, preschool teachers working in Head Start programs and public schools reported more participation in the on-going training series and engagement in technical assistance/coaching compared to teachers working in child care. Specifically, preschool teachers working in Head Start most frequently reported that they participated in the ongoing training series and nearly all received technical assistance/coaching related to *Foundations* compared to teachers working in child care and even teachers working in public schools. This was somewhat surprising since Head Start is not required to use ELDS. Preschool teachers working in the public school also frequently reported participation in the ongoing training series, but only two-thirds were receiving technical assistance/coaching; and this was primarily from their supervisor or through a mentoring relationship with another teacher. It was expected that the majority of public school teachers would report participating in the

ongoing training series, since the NC Early Learning Network in collaboration with the Department of Public Instruction (DPI) developed this training initiative. Lastly, child care teachers most frequently reported participation in a one-time training/workshop and less than half received technical assistance/coaching specific to *Foundations*.

After sharing results with the CRDIT, it was determined that the findings for child care participants may not be representative of an average child care worker's experience. Within the sample of preschool teachers working in the child care sector, approximately 41% were also participating in the Early Educator Support, Licensure and Professional Development (EESLPD) program. As part of this program, teachers received technical assistance/coaching from a mentor teacher and/or evaluator. Although these teachers represented a substantial portion of the teachers in the child care sector sample for this study, the EESLPD program only serves approximately 1,000 preschool teachers, which is a small segment of the ECE workforce population in NC (DCDEE, 2014).

Access to follow-up technical assistance/coaching following *Foundations* training is important not only from a theoretical perspective, but also from what is known about best practices in professional development for adult learners. Based on the bioecological model, effective proximal processes related to ELDS must occur on a regular basis, be reciprocal in nature, and become increasingly more complex over time (Bronfenbrenner & Morris, 2006). Furthermore, based on principles of effective professional development, learning related to ELDS should be an on-going process that includes opportunities for application and feedback (NAEYC, 1993; Mitchell & Cubey, 2003). As applied to professional development related to ELDS, training and technical assistance/coaching should be linked, ongoing, and become increasingly more complex as teachers become

more proficient at using *Foundations*. This implies that professional development approaches such as one-time trainings/workshops or even ongoing trainings not tied to technical assistance/coaching, may not be as beneficial to teachers. Rondell's professional development experience best illustrated why it is important for teachers to receive follow-up technical assistance/coaching, particularly after participating in a one-time training. She said,

It's been awhile since I had it [the one-time training] and I forgot a lot of it. The training I went to was like an overview, but then I didn't use it that much once I got back, so I've forgot a lot. No one talked to me about it. No one helped me use it. I just forgot. Maybe it would have been different if I had some help.

It is important that all teachers have equal access to "help" regardless of where they are employed. Therefore, variations in ELDS professional development by program sector should be further considered to ensure that all teachers have opportunities to engage in effective professional development that increases ELDS implementation.

Emphasis on *Foundations* during Technical Assistance/Coaching

Although three-fourths of teachers reported that they received some type of technical assistance/coaching related to *Foundations*, the qualitative results indicated that there is quite a bit of variation in the degree to which technical assistance/coaching focuses on *Foundations*. For example, teachers who received technical assistance/coaching from the EESLPD office expressed the need for more specific emphasis on *Foundations* from their mentor teachers and/or evaluators. Furthermore, qualitative results indicated that teachers participating in PLC meetings also had varying levels of support on *Foundations*. For some teachers, *Foundations* was only briefly mentioned or discussed during PLC meetings, but for others, *Foundations* was the focus of several PLC meetings. Donna was the prime example for how PLC meetings could be

facilitated in a way that provided support for teachers after *Foundations* trainings. After each *Foundations* training (seven-module training), she participated in a PLC meeting with other teachers who had also participated in the trainings. She described how PLC meetings were a way for her and other teachers to stay connected to *Foundations*, learn from other teachers who were also using *Foundations*, and keep her PLC coordinators informed about her professional development needs.

In summary, the quantitative findings related to technical assistance/coaching, which indicated that the majority of teachers were receiving some type of technical assistance/coaching related to *Foundations*, may be somewhat misleading since the findings from the interviews revealed that the emphasis placed on *Foundations* might be limited for some teachers. This means that there may be many opportunities to enhance technical assistance/coaching experiences teachers are already receiving, to ensure that *Foundations* is embedded into professional development in ways that will support teachers' understanding and effective use of standards. This may be particularly important since resources allocated for technical assistance/coaching are fairly limited across the state.

Most Useful/Helpful Aspects of *Foundations* Training(s)

While the quantitative findings revealed information about the types of *Foundations* professional development teachers were participating in across the state, and how this varied by program sector, the qualitative results provided insight into what teachers liked or found to be most helpful about the trainings. Interviewees reported numerous aspects about the trainings that they found to be helpful including learning about the logistics of how *Foundations* is organized (e.g., developmental continuum, emphasis on domains, labeling *Foundations* with sticky-notes/tabs etc.), talking to and

learning from other teachers, hands-on activities, classroom videos that illustrate how *Foundations* can be used, and more. From the bio-ecological perspective, proximal processes, such as those that occur during professional development experiences, must invite “attention, exploration, manipulation, elaboration, and imagination” (Bronfenbrenner & Morris, 2006, pg. 798). This also aligns with what is known about effective professional development principles. As suggested from interviewees, it is important that trainings share important content related to standards in a way that incorporates active, hands-on, and interactive approaches. This has been reinforced in literature that recommends ELDS professional development employ multiple strategies including presentations, activities, and discussions that encourage active and social learning (Gronlund & James, 2008; NAEYC, 1993). These principles of effective professional development are necessary if teachers are to actively engage in and respond to *Foundations* professional development. Findings from this study highlight the importance of *Foundations* professional development that adheres to principles and practices that support adult learning. This information may be useful for agencies responsible for developing and revising professional development initiatives related to *Foundations* in North Carolina.

Familiarity, Knowledge, and Use of *Foundations* (RQ2)

One of the goals for RQ2 was to examine what teachers have learned from their professional development on *Foundations*. Quantitative results indicated that on average, teachers were more familiar with and knowledgeable about information in *Foundations* that related to preschool-age children. Another aim of RQ2 was to learn about ways in which teachers used *Foundations*. In general, teachers most commonly reported using *Foundations* for lesson planning in both the surveys and interviews.

Teachers also reported using *Foundations* to inform their assessment process and learn about child development. Although teachers were less likely to use *Foundations* to support their work with children with disabilities and dual language learners, interviews yielded some rich examples of ways teachers' used this resource to enhance the education of children with special circumstances. Lastly, findings from both methodologies suggested that while teachers believed it was important to share *Foundations* with families, they were less likely to put this into practice. In the following section, these results will be elucidated, highlighting both consistencies and incongruences between quantitative and qualitative data.

Familiarity with and Knowledge of *Foundations*

As indicated by the quantitative results, on average, teachers were most familiar with and knowledgeable about specific aspects of *Foundations* that directly related to their work with preschool-age children. As expected, teachers were less familiar with information related to working with infants, toddlers, and children with special circumstances including children with disabilities and dual language learners. In regards to teachers' knowledge of age groupings, teachers received only average scores, but this may be because teachers paid more attention to the ages of children they directly worked with in their classrooms. On average, teachers scored much higher on questions related to their knowledge of domains. In fact, almost all teachers correctly identified all five domains found in *Foundations*, although there was less certainty about whether content areas, such as creative arts and mathematics, were domains in *Foundations*. It is possible that some teachers confused the domains in *Foundations* with the 10 areas of development and learning specified in Teaching Strategies GOLD, an assessment tool that is used by many teachers in NC. There was also confusion about whether

“Children with Disabilities” and “Dual Language Learners” were domains found in *Foundations*. Information as well as specific teaching strategies related to working with children with disabilities and dual language learners can be found in *Foundations*, so it is possible that some teachers are not clear that these are not specific domains. Lastly, teachers had lower scores on the true/false general knowledge questions. A possible explanation for this finding is that some of the information on the general knowledge (true/false) scale may only be addressed briefly during training(s), and that information may not be reinforced unless teachers intentionally go back and look through specific sections of *Foundations* (e.g., introduction, etc.).

In summary, teachers seemed to be more familiar with and knowledgeable about information and content that relates directly to working with preschool-age children. This includes domains, goals, and developmental indicators for preschoolers across the five domains found in *Foundations*. On the other hand, participation in *Foundations* training did not seem to be associated with teachers’ general knowledge of *Foundations* or their knowledge of age groupings. A meta-analysis by Fukkink and Lont (2007) found that specialized training improved the professional competencies of early childhood teachers, particularly in the attitudes domain compared to knowledge and skills domains. Based on findings from this study, it is plausible that *Foundations* training may be more successful at improving teachers’ attitudes about *Foundations*, than it is at increasing teachers’ knowledge of *Foundations*. Although without pre- and post-training data related to teachers’ attitudes and knowledge, this is only conjecture.

Using *Foundations* to Support Lesson Planning

While standards describe the “what” or the content of learning, the “curriculum, educational practices, and teaching strategies” are how teachers go about supporting

children's progress towards the developmental indicators outlined in ELDS (NAEYC & NAECS/SDE, 2002, p. 6). Therefore, using ELDS to inform lesson planning helps teachers become more purposeful about the types of activities, experiences, and support they provide in the classroom (Gronlund, 2006). Results from survey indicated that on average, *Foundations* is widely used by teachers for lesson planning. In fact, almost three-fourths of teachers reported *always* or *almost always* using *Foundations* when lesson planning. It is important to note that many teachers in the sample were employed in NC Pre-K funded classrooms, which requires teachers to use *Foundations* for lesson planning. Although the quantitative results are promising, they do not indicate the degree to which *Foundations* is used or teachers' process for using standards when developing lesson plans. However, interviews with teachers provided insight into *how* teachers used *Foundations* with lesson planning as well as specific challenges to using *Foundations* for this purpose.

During the interviews teachers described many positive and exciting ways they were using *Foundations* for lesson planning. For example, some teachers described how they used *Foundations* to ensure they were providing enriching experiences that supported children's development across all domains of learning. Teachers would check to ensure their lesson plans addressed at least one goal and/or developmental indicator in each of the five domains in *Foundations*. Some teachers also used *Foundations* when considering how to plan activities that could be adapted/modified to meet the children's individualized development. Using this information, teachers were able to differentiate instruction as well as provide materials that helped children make progress towards the goals and developmental indicators outlined in *Foundations*. *Foundations* was also used to plan large and small group time activities targeted to teach specific skills outlined in

Foundations. Lastly, some teachers described how they used *Foundations* in conjunction with other data sources/resources to aid in lesson planning. Although there were many ways teachers reported using *Foundations* for lesson planning, it was unclear what may have prompted teachers to use it in these ways. In other words, teachers may have learned about using *Foundations* for lesson planning from any number of experiences including training, technical assistance/coaching, or even reading *Foundations*. It is also unclear if teachers chose to use *Foundations* to support their lesson planning because they perceived it to be a helpful resource or because its use is mandated by their program.

Interviews with teachers also revealed some issues or challenges with using *Foundations* for lesson planning that warrant further consideration. First, it was noted that teachers' process for using *Foundations* for lesson planning might be limiting the usefulness of this resource. When teachers plan their lessons first and then add in *Foundations* goals after they finish writing their lesson plans, their use of *Foundations* may lack intentionality. It is possible that teachers who are using *Foundations* for lesson planning, particularly those who are required to document *Foundations* on their lesson plans, go back and add the goals and/or developmental indicators to make sure they have dotted their "i's" and crossed their "t's," but for not for any other purpose. During the CRDIT meeting, when these results were discussed, one team member mentioned a teacher who was documenting *Foundations* on her lesson plan because it was required at her center, but when she relocated to a new job she quit using *Foundations* because it was no longer required. The CRDIT members indicated that while there seems to be genuine interest from teachers about using *Foundations* for lesson planning, neither the one-time training nor the on-going training series (seven-module training) addresses this

topic with any depth. As noted in the literature, professional development experiences should include opportunities for teachers to apply their knowledge in practical ways, such as using *Foundations* for lesson planning (NAEYC, 1993). It is possible that if teachers were given more support with using *Foundations* for lesson planning, via training or technical assistance/coaching, they may approach using *Foundations* for this purpose with more intentionality and thoughtfulness.

Another issue raised by teachers during the interviews was challenges related to using *Foundations* in addition to other resources such as assessment data, child observations, and curricula. Although using *Foundations* in conjunction with other resources/sources of data provided useful information for lesson planning, many teachers felt overwhelmed, particularly when they were unclear about what each of these resources/sources of data were, how they could be used, and how they related to each other. In addition to limited understanding about how each of these resources/sources of data could be used to support lesson planning, some teachers also experienced frustration at having to use multiple resources, particularly when they had limited time in their week for lesson planning.

Using *Foundations* for the Assessment Process

As described by Gronlund (2006), the assessment process includes observing children to gather information, documenting children's learning, and evaluating their progress. Although most teachers interviewed did not use *Foundations* for all three parts of the assessment process, they did describe some ways they used standards for each of these processes. Quantitative and qualitative results related to using *Foundations* for the assessment process will be discussed in more detail.

After lesson planning, survey results indicated that the most commonly reported uses of *Foundations* were to observe children to guide lesson plans and to document children's learning. Teachers also commonly reported on the survey that they were using *Foundations* to inform their observations and assessments. In a few interviews, teachers described how they used *Foundations* for these purposes. For example, Nina described how she used *Foundations* and Teaching Strategies GOLD to develop her own checklists that she used when observing children. These checklists were an easy way for her to document children's progress, although it is important to note that *Foundations* was not intended to be used as a checklist (North Carolina *Foundations* Task Force, 2013). Leah created her own anecdotal record sheets that she used to document child observations. On these sheets she would record her observations of children across the five domains of development, and then she would write the corresponding goals from *Foundations* and GOLD. Both of these teachers used their observations and documentations of children's learning to complete child assessments in GOLD. It is important to stress the complexity of using *Foundations* for the assessment process and to note that it takes a high level of sophistication for teachers to use *Foundations* for this purpose. It is also noteworthy that neither of these teachers had received specific training or guidance on using *Foundations* to help them observe, document, and assess children. Unlike some states, North Carolina has not created specific tools that streamline the observation-documentation-evaluation process that is aligned with *Foundations* (Gronlund, 2006). There are recommended assessments that are aligned with *Foundations*, but not specifically designed to be used with *Foundations*. Thus, this task has been left to teachers, many of which may not have the skills or knowledge

necessary to implement the complex process of using standards to guide observations, collect data, and interpret results from the assessment process.

Using *Foundations* to Learn about Child Development

One of the many intended purposes of *Foundations* is to serve as a resource that teachers could use to learn about child development (North Carolina *Foundations* Task Force, 2013). Results from both methodologies reveal that some teachers are using *Foundations* for this purpose. In fact, this may be a great resource for teachers, particularly those with limited knowledge of child development or those who lack experience working with specific age groups. For example, Amy was working with young three-year-olds for the first time. She described how she used *Foundations* to understand typical development for children this age. She said, “with this younger group, knowing, okay, this is normal for them; they don’t need to be doing this.”

During the CRDIT meeting when these results were discussed, one member mentioned that *Foundations* trainers associated with the one-time training initiative through the Child Care Resource and Referral Network are using *Foundations* for this purpose. Several trainers reported that they are using *Foundations* to show child care providers developmentally appropriate expectations for specific age groupings. The CRDIT member noted that many teachers, particularly those working in the child care sector, may have limited education related to early childhood education. She described how *Foundations* is not as scary as a textbook and it is relatively easy to use, so it has the potential to be a great resource for teachers wanting to learn more about child development.

Using *Foundations* with Children with Disabilities

As evidenced in the literature, there are many ways teachers can use ELDS with children with disabilities, but quantitative results indicated that teachers were only using it for this purpose *some of the time*. Although the use of *Foundations* for this purpose was somewhat lower than more general uses that were examined in this study, it was still evident in both the surveys and interviews that there was great potential for the use of *Foundations* in this area. Although teachers less frequently reported using *Foundations* with children with disabilities on the survey, interviewees highlighted some very specific uses that are worth mentioning.

One of the most important ways teachers reported using *Foundations* was to understand the individualized development of children with disabilities. Teachers described how they looked at developmental indicators for a younger age group or sometimes even an older age group to understand the development of children with disabilities. Teachers also described how they used this information to differentiate their instruction and select appropriate materials that matched children's level of development. This was one of the specifically described uses for *Foundations* with children with disabilities articulated in the document, so this was an encouraging finding (North Carolina *Foundations* Task Force, 2013).

Another way teachers reported using *Foundations* was to communicate with other adults working with children with disabilities such as families, therapists/specialists, directors, and other teachers. ELDS have the potential to create a "shared language and evidence-based frame of reference" for these conversations, but this would require other adults working with these children to be familiar with the document (NAEYC & NAECS/SDE, 2002, p. 2). According to Gail, other adults she has worked with including

therapists/specialists and even kindergarten teachers are not at all familiar with *Foundations*, which may limit the potential to use *Foundations* for this purpose.

Lastly, “using *Foundations* to develop goals for children with disabilities” was the item with the lowest mean on this section of the survey, but two interviewees described how they were using it for this purpose. Gail, a teacher working in a developmental day program, described how she used *Foundations* to write Individualized Education Program (IEP) goals and service plans for children with disabilities in her classroom. Amy also used *Foundations* for this purpose, but she explained that sometimes children’s IEPs are already written before the IEP meeting, so she’s not able to contribute by using *Foundations* to help set goals. It is unclear from the data if pre-written IEPs are a frequent occurrence, but that could be a potential explanation for why teachers reported using *Foundations* less often for this purpose in both the surveys and interviews.

Although *Foundations* is not being used to support teachers’ work with children with disabilities as much as it could, interview data suggested there are many opportunities for teachers to use *Foundations* for this purpose. This would certainly require an expansion of professional development efforts, including training and technical assistance/coaching specific to using *Foundations* with children with disabilities. Thus far, training initiatives have yet to address this topic with any depth and it is unclear how much technical assistance/coaching support teachers’ work in this area.

Using *Foundations* with Dual Language Learners (DLL)

Many states, including North Carolina, have provided some form of guidance pertaining to the use of standards with DLL (Scott-Little et al., 2007). Within *Foundations*, there are resources on using ELDS to support dual language learning. In

fact, an entire chapter of the book is dedicated to just this. Although dual language learning is addressed in *Foundations*, neither the one-time training nor the seven-module ongoing training series speak to this topic with any depth. This may be part of the reason why teachers from the survey and interviews reported less use of *Foundations* for this purpose compared to all other uses for *Foundations* that were investigated in this study. Although 83% of teachers who completed the survey reported working with DLL in the past two years, on average teachers used *Foundations* to support their work with DLL only *some of the time*. Furthermore, Nina was the only teacher interviewed who reported using *Foundations* for this purpose. Even so, she provides a great illustration of how *Foundations* could be used to learn about the stages of language acquisition for DLL and to identify specific teaching strategies that support their language development.

Foundations has the potential to support teachers' work with DLL in the classroom, but it is evident that many teachers are not using it for this purpose. It is possible that some teachers are not informed about how they can use *Foundations* with DLL, which may be attributed to limited attention to this topic during training and technical assistance/coaching. Another potential explanation could be that teachers are using other resources, such as Teaching Strategies GOLD, to learn about DLL.

Using *Foundations* with Families

Organizations, including the National Association for the Education of Young Children (NAEYC) and the National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE) have taken the position that the implementation of ELDS must “engage and support families as partners” (NAEYC & NAECS/SDE, 2002, p. 3). Results from the survey indicated that on average, teachers

agreed that it is important to share information about *Foundations* with families. In spite of teachers' beliefs about the value of sharing *Foundations* with families, mean scores on the items related to sharing or using *Foundations* with families were somewhat lower compared to average scores on the general implementation scale. This may mean that although many teachers believed it is important to use/share information about *Foundations* with families, they may not have the knowledge, skills, resources, or time to do so effectively.

From a bio-ecological perspective, *Foundations* has the potential to create and reinforce the linkage between children's home environment and school environment. Although the frequency with which teachers are using the document for this purpose was lower than other uses, results from both methodologies found several ways teachers are using *Foundations* to strengthen the relationship between these two environments. As indicated in the survey, teachers reported their primary purposes for using *Foundations* with families included describing to families how/what children are learning supports their readiness for school and showing families how the information they are teaching fits with children's level of development. Another way teachers reported using *Foundations* on the survey was to share specific information about their child's development. This was also voiced in the interviews along with using *Foundations* to address families' concerns about their child's development.

Although many teachers reported one or more ways they were using *Foundations* with families on the survey, it was less common for teachers to use *Foundations* to share activities for families that support children's development and share general knowledge about child development with families. These results may be in part due to limited resources related to *Foundations* that can be shared with families as

well as a lack of knowledge about one specific resource, *Foundations for Families*, which is available to teachers online. Only a fourth of teachers who completed the survey were aware of *Foundations for Families*, and none of the interviewees were aware of this document. Teachers' use of this document could be improved if they were made aware of its existence, its importance and how they could access it.

During the CRDIT meeting, members mentioned that neither the one-time training nor the on-going training series went into depth about the benefits of sharing *Foundations* with families or strategies for sharing it with families. The developers of the ongoing training series recognized this gap in content and they are currently rectifying this oversight in the revised seven-module training, which will become available online sometime in 2016. Although this will be useful for future training participants, it will not help those who have already been trained. It was also noted during the CRDIT meeting that Child Care Resource and Referral (CCR&R) trainers, who provide the one-time training, are all knowledgeable about *Foundations for Families*, but there is inconsistency between trainers on how or even if this resource is shared with participants. One CRDIT member remarked about the variability between counties. She explained how the CCR&R trainers in one county noted there were no strategies for families in the 2013 version of *Foundations*, which was something that was included in the original *Foundations*. They took it upon themselves to develop resources and tools that could be shared with families in their community. For example, they created a color-coded deck of cards with the developmental indicator from *Foundations* on one side and on the other side, they have strategies for families to use at home that will help their child make progress in that area of learning. While these efforts benefit some

communities, it would be beneficial if these resources were made widely available (e.g., on the DCDEE website, provided by agencies, etc.).

In conclusion, teachers reported several ways in which they are using *Foundations* for a variety of purposes. It is possible that the ways teachers choose to use *Foundations* relates back to what they learned through training and technical assistance/coaching. How they use *Foundations* may also be attributed to what they have read and the types of resources that have been made available to them. It may also have something to do with requirements or mandates related to their program or their position. Regardless of teachers' reasons for using *Foundations* for these different purposes, it is evident that *Foundations* can be used in a variety of ways that benefit children and families across North Carolina.

Variations by Professional Development Type and Hours (RQ3)

The overarching goal of RQ3 was to determine if the amount and type of *Foundations* professional development teachers' participated in was related to how prepared they felt to use *Foundations*. It is important to note that only quantitative data was used to explore RQ3, and that the research design precludes drawing any causal conclusions from the results. Instead, the data provide a descriptive picture of how well prepared teachers who participated in different types and amounts of professional development felt they were to use *Foundations*. In general, teachers in the ongoing training series and the technical assistance/coaching groups were more familiar with *Foundations*. Furthermore, hours of training were correlated with teachers' familiarity with *Foundations*. Additionally, teachers in the ongoing training series group had the most knowledge of *Foundations* compared to the other two professional development groups, but hours of training was not correlated with teachers' knowledge. Lastly,

teachers in the technical assistance/coaching group used *Foundations* more than teachers in the one-time training/workshop group and there was no correlation between hours of training and teachers' use of *Foundations*. These results will be examined further in the following section.

Familiarity

Quantitative findings indicated there were differences in teachers' familiarity with *Foundations* based on both the type and amount of professional development they experienced. On average, teachers in the ongoing training series and the technical assistance/coaching groups were more familiar with *Foundations* on a whole as well as more familiar with *Foundations* information specifically related to preschoolers when compared to teachers in the one-time training/workshop group. There was also a moderate positive correlation between hours of training and teachers' overall familiarity with *Foundations* as well as their familiarity with preschool-related information. These results were somewhat surprising, because it was hypothesized that the technical assistance/coaching group would be more familiar with *Foundations* compared to the other professional development groups, but in fact, they were only more familiar with *Foundations* when compared to the one-time training/workshop group.

From a bio-ecological perspective, proximal processes which occur during training as well as technical assistance/coaching are more likely to influence development when they occur on a regular basis over an extended period of time, are reciprocal in nature, and become increasingly more complex (Bronfenbrenner & Morris, 2006). This overlaps with effective professional development principles including the degree to which professional development is an ongoing process, responds to individuals, and includes opportunities for application and feedback (NAEYC, 1993).

These are just a few of the ingredients necessary for effective professional development, none of which are found in one-time trainings/workshops. This means that teachers who only participated in a one-time training/workshop may have had limited exposure to *Foundations* as well as inadequate opportunities for application and feedback, whereas teachers in the ongoing training series and technical assistance/coaching groups were more likely to reap these benefits. In summary, this may be the reason why on average teachers' participation in a one-time training/workshop was associated with less familiarity with the document.

Knowledge

Findings from the survey also indicated differences in teachers' knowledge of *Foundations* based on the type of professional development they experienced. On average the ongoing training series group had more knowledge of *Foundations* compared to the one-time training/workshop and technical assistance/coaching professional development groups. From a bio-ecological viewpoint, ongoing training may be associated with more knowledge of *Foundations* because teachers received more exposure to information and content within *Foundations* during the training modules. This is somewhat contrary to the finding that hours of training were not significantly correlated with knowledge scores. Although it was hypothesized that the technical assistance/coaching group would have the highest knowledge scores, teachers' in this group may not have received technical assistance/coaching focused on specific content related to ELDS. Based on previous research, it is not surprising that on average, teachers who participated in the one-time training group had less knowledge of *Foundations* than teachers in the ongoing training series group. For example, some researchers have found that participation in training is more likely to impact teachers'

attitudes compared to knowledge and others have found one-time trainings to have no impact on teachers' knowledge (Fukkink & Lont, 2007; Neuman & Cunningham, 2009).

General Implementation

Lastly, group comparisons were made to see if there were differences in how teachers reported using *Foundations* based on the type and/or amount of *Foundations* professional development they experienced. Some researchers have found limited evidence that coaching significantly impacts practitioners' knowledge, attitudes, and beliefs, but these studies failed to examine whether coaching impacts teachers' practices (Isner et al., 2011). In the current study, there was evidence to suggest that teachers who received coaching demonstrated higher levels of ELDS implementation. On average, teachers in the technical assistance/coaching group used *Foundations* more than teachers in the one-time training/workshop group. The ongoing training series group did not differ significantly from either of the other two professional development groups. Furthermore, there was no correlation between hours of training and teachers' general implementation of *Foundations*.

Teachers who received technical assistance/coaching had the opportunity to apply what they learned about *Foundations* and receive feedback from their mentor teachers and evaluators on how they were using it in the classroom. This is significant from a bio-ecological standpoint and it also aligns with principles of effective professional development and research. It is likely that teachers in the technical assistance/coaching group were exposed to increasingly complex reciprocal interactions during proximal processes that occurred with their mentor teachers and evaluators. During these interactions, teachers may have received individualized feedback on their practices in the classroom, drawing connections between *Foundations* and their work with children

and families. Researchers have found that professional development is often more effective when teachers have the opportunity to investigate and reflect on their practices within their own workplace (Mitchell & Cubey, 2003). In the context of their own classroom, teachers are able to apply their knowledge in meaningful ways and receive feedback from a more experienced and knowledgeable early childhood professional. Teachers in the one-time training/workshop group may or may not have received any follow-up technical assistance or feedback after participating in *Foundations* training and the same is true for ongoing training series group.

Supports and Challenges/Barriers (RQ4)

In North Carolina, there has been a tremendous amount of work invested in both the development and implementation of ELDS. Although much has been done to increase the ECE workforce's awareness about NC's standards, the revised *Foundations* is still relatively new. For effective, widespread ELDS implementation, there must be a significant expansion of professional development (NAEYC & NAECS/SDE, 2002). That was why it was important to learn about professional development needs directly from those who are charged with using *Foundations*. In both the interviews and surveys, teachers identified their needs/supports as well as challenges with using *Foundations*, which was the aim of RQ4.

Supports needed for *Foundations* Implementation

On average, teachers believed they would benefit a great deal from additional support/guidance and they were receptive to receiving more professional development. In the quantitative results, teachers reported that they would benefit most from professional development related to using *Foundations* with children with disabilities, dual language learners, and families. This is not surprising since teachers reported using

Foundations less for these purposes and these topics are not addressed in depth within *Foundations* trainings to date. These professional development needs were also identified in the interviews, but in addition to these, teachers also said that they would benefit from training on how to use *Foundations* for lesson planning. One of the CRDIT members confirmed this professional development need. She explained how the one-time training offered by the CCR&R network briefly discusses lesson planning. According to her, *Foundations* trainers have reported back that teachers want to learn more about using *Foundations* for lesson planning, but there isn't enough time in the one-time training to make this a priority. Additionally, a few interviewees indicated that it would be helpful if other trainings (on topics not specific to *Foundations*) related back to *Foundations* or were blended with *Foundations*. It is important to note that while teachers' may benefit from blended trainings, they would first need a stand-alone introductory training on *Foundations* in order to understand how *Foundations* is integrated in trainings on other topics.

There were many resources that teachers believed would help them to more effectively use *Foundations*. These included activities for families, example lesson plans, and resources related to using *Foundations* with DLL, children with disabilities, and families. It was interesting that on average, teachers rated resources as a greater need than trainings and technical assistance/coaching. Teachers may have rated resources/print materials higher than other supports because they are fairly familiar and comfortable with print resources. Additionally, teachers may be less likely to rate training and technical assistance/coaching as a higher need if they had received these types of professional development in the past. These findings from the survey were somewhat contradictory to one of the themes from interviews. A few interviewees described how

they were frustrated and sometimes confused because they were required to use too many resources. Based on these results, it can be discerned that teachers believed they would benefit from additional resources related to using and sharing *Foundations* with others, but they will need clear and consistent guidance on how these resources can be used. Furthermore, if resources are developed, they need to be disseminated widely and teachers need to know how to access them.

Challenges/Barriers to Using *Foundations*

In addition to professional development needs, teachers' self-reported challenges/barriers to using *Foundations* were also examined using both methodologies. From a bio-ecological perspective, it was important to examine challenges teachers faced, because these are barriers that could hinder teachers' development of competence at using *Foundations* (Bronfenbrenner & Evans, 2000). Although teachers reported several challenges to using *Foundations*, it is important to note that average scores on the survey items were fairly low, meaning teachers found these items to be only *a little to somewhat* challenging.

Time was the greatest challenge/barrier identified by teachers in both the surveys and interviews. This included time to attend trainings and time to plan classroom activities using *Foundations*. With limited time, it is important for teachers to have a working knowledge of *Foundations*, in addition to resources that are accessible and easy to use. When teachers have to "hunt" for information or they are uncertain of how to use *Foundations*, they may grow to view this document as a nuisance rather than a resource. Other challenges that were identified included a lack of training on using *Foundations* for many topics that were previously identified as professional development needs, including using *Foundations* with dual language learners, children with

disabilities, and families. Lastly, teachers reported having access to a hard copy of *Foundations* was a challenge. According to CRDIT members, the Division of Child Development Early Education (DCDEE) has already identified this need in the early childhood community and additional copies of *Foundations* will be distributed in 2016.

Variations by PD Type

Although there were no variations in professional development needs/supports by program sector, there were a few differences in the challenges reported by teachers who have received different types of professional development. Two items related to resources/print materials were significantly different across groups. Quantitative results indicated that on average, teachers in the technical assistance/coaching group wanted examples of family activities and lesson plans that incorporate *Foundations* more often than teachers in the one-time training/workshop and ongoing training series groups. A possible explanation for this finding is teachers in the technical assistance/coaching group, on average, were quite familiar with *Foundations* and they were already using it a great deal in the classroom. These teachers may have been ready to expand their use of *Foundations*; hence, they believed they would benefit from these two resources. Additionally, teachers in this professional development group are required to use *Foundations* for lesson planning and their mentor teachers and evaluators check to see that *Foundations* is documented on their lesson plans. Therefore, it makes sense that they would want to have access to example lesson plans. Responses from interviewees being served by the EESLPD program, who were using and documenting *Foundations* on their lesson plans, supported this explanation. These teachers were concerned about using *Foundations* the “right” way for lesson planning, because they had not received a lot of guidance on *how* to use *Foundations* for this purpose.

Penetration of *Foundations* in the NC ECE Workforce (RQ5)

Now the discussion will turn to the secondary component of the study, which examined *Foundations* implementation on a wider scale in North Carolina. The aim of RQ5 was to learn about familiarity with *Foundations*, engagement in professional development, and barriers to accessing and using *Foundations* as reported by a broad spectrum of early childhood education (ECE) professionals. Each of these topics will be further discussed using survey data completed by ECE professionals from across the state.

Familiarity, Use, and Access to *Foundations*

Over three-fourths of ECE professionals reported being familiar with the revised *Foundations* and many were using it in their work. Furthermore 85% had a copy of the document. Although these findings were promising, it is important to note that only a third of the sample included teachers and of those, only five were working in infant and toddler classrooms. Many individuals from the sample were working as directors, trainer/technical assistance providers, and teacher educators in institutions of higher education, so it was exciting to learn that many ECE professionals other than teachers were also using *Foundations*, but the findings are not an indication that teachers, as a target audience, have ready access to the printed document.

Participation in Training

Although many ECE professionals were using the revised *Foundations*, only about half of the sample had participated in training on *Foundations*. Of those that received training, half participated in the *NC Foundations for Early Learning and Development Training* (one-time training), approximately a fourth participated in the *Effective Teacher Practices Supporting NC Foundations for Early Learning and*

Development (seven-module training), while the remaining participants took part in other trainings such as conferences, workshops, and in-service trainings at their places of employment. It was interesting that many of the ECE professionals that reported using the revised *Foundations* had not yet received training on *Foundations*. There are many plausible explanations for this finding, which will be discussed in the next section on challenges and barriers. Regardless of ECE professionals' reasons for not participating in *Foundations* training, it is evident that there is still much work to do to increase professional development engagement.

Challenges/Barriers to Using *Foundations*

From a policy standpoint, it is important to understand what challenges and barriers ECE professionals have experienced related to accessing and using *Foundations*. The top-rated challenges included a limited awareness of trainings and a lack of time as well as financial resources to attend professional development. From these findings it can be surmised that professional development agencies may not be advertising in ways that are reaching some early childhood professionals, so they need to be more strategic in making ECE professional aware of *Foundations* trainings. It is not surprising that a lack of time and resources to attend *Foundations* training would be challenging to ECE professionals, particularly for those working in child care programs and family child care homes. Although the trainings themselves may be offered at a reasonable cost (or free), there may be other expenses associated with sending staff to trainings, including travel and meals. For those working in child care centers or family child care homes, it may also include paying for substitutes or the costs associated with closing the program for a period of time so staff can receive training.

There were also some interesting themes from ECE professionals' open-ended responses, some of which echoed findings from the primary component of the study. For instance, some participants described how there was limited availability of trainings. It is possible that the amount of available training may not be meeting the demand in some regions of the state. Lack of "buy-in" was another challenge/barrier mentioned by several participants. Some ECE professionals may not "buy in" to *Foundations* because they do not understand the purpose of the document and how it can be used. For others, they may be satisfied with the status quo, so unless the use of *Foundations* becomes mandatory, they may never use it. Similar to results from the primary component, access to copies of *Foundations* may be a challenge for some. For example, some early childhood programs have to share a copy of *Foundations* among all staff. Additionally, some ECE professionals, such as trainers and faculty, need multiple copies of *Foundations* so they can share the document with participants/students.

Lastly, limited understanding about the relationship between *Foundations* and other resources/documents was a challenge reported by some professionals. This challenge/barrier was also reflected in the surveys and interviews for the primary component of the study. Challenges/barriers to ELDS implementation, such as those that have been described here, can inhibit ECE professionals' development of competence at using ELDS (Bronfenbrenner & Evans, 2000). Therefore, policy makers and other stakeholders should develop strategic plans that reduce challenges/barriers while providing supports that ECE professional believe will increase their knowledge and use of *Foundations*.

Recommendations

Next, the discussion will turn to recommendations for ELDS implementation that are based on previous literature, findings from the current study, and recommendations from national organizations. The following sections will include recommendations related to professional development (one through three), resources (four through six), and policy (seven through eleven). Although these recommendations are specific to North Carolina, they may be useful to other states that are working to increase ELDS implementation.

Professional Development

Recommendations one through three relate to professional development. These recommendations are derived from the literature as well as findings from the current study.

Recommendation one. Professional development related to ELDS should be ongoing and include both training and technical assistance/coaching.

From both a theoretical and empirical standpoint, it is recommended that ELDS professional development be ongoing and include training as well as technical assistance/coaching. Although short-term efforts such as one-time trainings and conferences/workshops are the most common form of ELDS professional development, it is recommended that training be comprehensive and ongoing (NAEYC & NACCRRA, 2011; Petersen et al., 2008; Scott-Little et al., 2003). As suggested by the current study, teachers in the ongoing training series and technical assistance/coaching groups reported more positive outcomes including more familiarity with and knowledge of *Foundations* as well as implementation of standards. Based on findings from this study as well as previous literature, it is recommended that ELDS professional development include a combination of ongoing training sessions in combination with individualized

follow-up such as technical assistance/coaching (Gronlund & James, 2008; Petersen et al., 2008).

There are several potential challenges that must be considered if states are to provide more ongoing training and technical assistance/coaching. At the top of this list is limited resources for ELDS implementation, including professional development (Scott-Little et al., 2003). Furthermore, all ECE professionals need to have access to these types of ELDS professional development. Therefore, ongoing training and coaching models must be developed and/or made available across child care sectors. Lastly, engagement in ongoing training and coaching requires more time, commitment, and financial support, which may be challenging for many ECE professionals.

Recommendation two. Technical assistance/coaching related *Foundations* should be enhanced in professional development systems that are already in place.

Although survey results from the primary component of the study indicated that many teachers are receiving some form of technical assistance/coaching, interviews with teachers raised questions about the degree to which *Foundations* is explicitly the focus of such professional development. It would behoove technical assistance providers, including coaches, mentors, consultants, and even supervisors, to be more intentional about providing support on using *Foundations* when meeting with teachers. It is important to note that this would require technical assistance providers to have an in-depth understanding of *Foundations* including the ways it can be used in the classroom and with families. By embedding more intentional *Foundations* support in technical assistance/coaching systems that are already in place, teachers can be better supported. However, without an expansion of funding to support additional technical assistance/coaching, many teachers, particularly those working in the child care sector,

will not have access to such support. Thus the gap between teachers' use of ELDS in different sectors will be further widened.

Recommendation three. Professional development opportunities should include a basic overview of *Foundations* as well as more in-depth trainings on a variety of topics related to *Foundations*. Training should be offered in tandem with technical assistance/coaching that further supports teachers' understanding and use of *Foundations* for a variety of purposes.

Training as well as technical assistance/coaching can support teachers in expanding the ways they think about and use *Foundations* for many purposes including lesson planning, documentation, informing assessments, and so on. As indicated in the current study, there is great interest in professional development opportunities on a variety of topics that are related to *Foundations*. These topics include using *Foundations* for lesson planning and sharing information about children's development with families. Additionally, teachers would like professional development related to using *Foundations* to enhance their work with children with disabilities and dual language learners. Training on these topics is critical because effective professional development opportunities should always address a continuum of children's abilities and needs as well as support educational practices that are inclusive of diverse children and families (Mitchell & Cubey, 2003; NAEYC & NACCRRA, 2011). Teachers would also benefit from training that demonstrates how *Foundations* is different from assessments and curricula, but can be used in conjunction these resources. In summary, teachers should begin with a general overview training on *Foundations*, followed by more in-depth training and technical assistance/coaching that allows teachers to apply what they know about *Foundations* in practical ways that support their work with children and families.

Resources

Recommendations four through six relate to resources needed to increase ELDS implementation. These recommendations are based on the literature as well as findings from the current study.

Recommendation four. All early childhood professionals should be provided with personal hard copies of *Foundations*.

The most important resource required for all early childhood professionals is a personal hard copy of *Foundations*. This is not only important for individuals working directly with young children, but also for those who support early childhood educators. Some ECE professionals, such as teacher educators and trainers, may need multiple copies of *Foundations*, so they can provide hand-on opportunities with *Foundations* for students/training participants. It would also be advantageous if *Foundations* trainers had extra hard copies of the document to give to training participants who did not have their own copy. It cannot be assumed that all training participants will have access to the document, and ECE professionals will not be able to apply what they learn in trainings if they do not have access to *Foundations*. Although *Foundations* is available electronically, some ECE professionals may have not access to the internet or a computer, so hard copies should be provided to all those working in the early childhood field. In order for this recommendation to be met, the Division of Child Development and Early Education must allocate the necessary resources for dissemination (Petersen et al., 2008). Furthermore, agencies distributing copies of *Foundations* will need to be strategic in how they disseminate the document to ensure that all those working with young children are provided with their own copy.

Recommendation five. Early childhood professionals should be made aware of *Foundations for Families* (2013) and know how to access this documents. Additionally, more family resources should be developed.

In addition to providing increased access to *Foundations*, ECE professionals need to be made aware of *Foundations for Families* (2013). This companion document is designed to support early educators' conversations with families about their child's development and it is aligned with the *North Carolina Foundations for Early Learning and Development* (Foundations, 2013). *Foundations for Families* includes handouts for each age level (i.e., infants, ones, twos, threes, fours) and it includes information about typical development as well as activities families can do to support their child's development. This resource is available on the North Carolina Division of Child Development and Early Education website in both English and Spanish. In the current study only a small percentage of teachers were aware of *Foundations for Families*, and an even smaller percentage were sharing this document with families. It is strongly recommended that professional development aim to improve teachers' awareness of and access to *Foundations for Families*. Furthermore, it would be beneficial if additional resources were developed that could further support teachers' communication with families. Lastly, there are many languages spoken in ECE settings, so it is recommended that *Foundations for Families* as well as other resources be translated into additional languages.

Recommendation six. Additional print resources that can support teachers' use of *Foundations* for lesson planning and working with children with disabilities and dual language learners should be developed.

Findings from the current study suggest that teachers would benefit from additional print resources to support their use of *Foundations*. For instance, several teachers were interested in viewing example lesson plans that incorporate *Foundations*. Many teachers are required to use *Foundations* for this purpose but, as results indicated, teachers have received very little guidance from either training or technical assistance on using *Foundations* for lesson planning. Teachers may have specific forms they are required to use for lesson planning or specific rules or guidance they must adhere to when developing and/or documenting their lessons, so it may be challenging to develop lesson planning resources that can be used across ECE settings. Based on this study, it is also recommended that resources be developed to support teachers with using *Foundations* with dual language learners and children with disabilities. These are also topics that have not been addressed in *Foundations* trainings, so teachers would benefit from print resources that provide information and guidance on how *Foundations* can be used to help teachers support children with special circumstances in their classroom. It is important to note that all resources developed to enhance ECE professionals' use of *Foundations* must be accompanied with strategic plans for dissemination.

Policy-Related Recommendations

The next section addresses policy-level recommendations (seven through eleven) for the allocation of ELDS funding, professional development systems, requirements for implementation, monitoring, and expanding ELDS implementation efforts to a wider audience. As described by Bronfenbrenner (1994), these recommendations are for institutions that exist within the exosystem, such as the government, Child Care and Development Fund administrators (in NC this is the Division of Child Development and Early Education), Quality Rating Improvement Systems

(QRIS), child care licensing, institutions of higher education, department of public instruction, and resource and referral agencies to name a few. Although these state level systems may not directly impact early childhood professionals, they indirectly impact processes related to their engagement in professional development as well as use of ELDS.

Recommendation seven. Adequate amount of resources should be allocated for developing, disseminating, implementing, and evaluating ELDS.

Effective implementation of ELDS requires an immense amount of resources. “Adequate resources should be available and budgeted for the development, dissemination, implementation, and evaluation” of ELDS (Petersen et al., 2008, p. 9). States should examine the amount of funds allocated for each of these activities, to determine if there is adequate financial support. In North Carolina, *Foundations* has been recently revised, therefore funding should be allocated for increased dissemination as well as implementation and evaluation efforts. Based on findings from this study, conscientious efforts should be made to support ELDS implementation within the child care sector, particularly since child care teachers reported less engagement in on-going training as well as technical assistance/coaching related to *Foundations*. It is important to note that limited resources for early care and education is a pervasive challenge in most states, including North Carolina. Therefore, states may want to consider cross-agency funds as well as grants to support ELDS development, dissemination, implementation, and evaluation (Petersen et al., 2008).

Recommendation eight. ELDS should inform all aspects of the professional development system. These systems must be expanded and coordinated for effective ELDS implementation.

Having access to ELDS does not ensure their effective use, thus, ELDS implementation must be supported by the states' professional development system (Petersen et al., 2008). Therefore, an important policy-level implication includes the expansion as well as coordination of professional development services in North Carolina. Three integral parts of the professional development system include higher education, training, and technical assistance (NAEYC & NACCRRA, 2011). It is recommended that these systems work in coordination with one another to provide teachers with the necessary support to effectively implement ELDS. Although the focus on the current study only included training and technical assistance, it is important to consider how higher education in NC is supporting ELDS implementation. State policy-makers are encouraged to thoughtfully examine these systems to determine if there are additional ways they can work in tandem to support ELDS implementation.

Since training and technical assistance were the focus of the current study, specific recommendations about the coordination of these systems can be made. Many professional development opportunities, including those being offered in North Carolina, are fragmented for various reasons. For example, multiple agencies have developed *Foundations* professional development initiatives, but these opportunities are uncoordinated and they are primarily being offered to different child care sectors. Increasing cross-sector training as well as coordination between programs/agencies responsible for providing ELDS training, would increase access to professional development opportunities for teachers from all child care sectors. Furthermore, in North Carolina and other states, it is important to consider how ELDS can frame all professional development activities (Neuman & Roskos, 2005). For example, trainings related to aspects of children's development (e.g., cognitive development, social and

emotional development) and trainings related to specific content such as literacy, science, and mathematics, can all embed information related to ELDS. This would require trainers to be knowledgeable about *Foundations* as well as skilled at embedding *Foundations* into trainings on a variety of topics.

Recommendation nine. States must determine requirements for ELDS implementation in early childhood settings.

A critical decision in regards to implementation of ELDS is requirements about their use in various early childhood sectors. Representatives from states must determine if ELDS implementation will be voluntary, mandatory for all programs, or mandatory for some programs. Scott-Little et al. (2003) note that “the implementation of standards in some programs but not in others could potentially even further divide our already fragmented “nonsystem,” with some programs being held responsible for child outcomes and others not.” This leads to a system where some children have access to the benefits of ELDS while others do not (Kagan & Scott-Little, 2004). In many states, including North Carolina, ELDS implementation is voluntary for some programs, but not for others. Currently the use of *Foundations* is only required in NC Pre-K classrooms, but many other programs choose to use *Foundations* of their own volition (North Carolina Division of Child Development and Early Education, 2013). The time is ripe for policy-makers to consider regulations for who is mandated to use *Foundations*. Decisions about where and how the use of ELDS are required of programs will not only have important implications for professional development systems, these decisions will also impact monitoring systems, which will be addressed next.

Recommendation ten. Systems for monitoring ELDS implementation must be developed. These systems should not only aim to monitor the use of ELDS, but also improve ELDS implementation.

States need to develop a process for monitoring their use as well as providing programs with supports and resources to effectively use them (Petersen et al., 2008). Monitoring programs can be embedded into states' QRIS system and/or child care licensing (Petersen et al., 2008). A potential benefit for embedding monitoring as part of a state's QRIS system is an opportunity to help programs *improve* their knowledge and use of ELDS. For example, with funding from NC's Race to the Top Early Learning Challenge grant, work is currently being done to strengthen North Carolina's monitoring system by including the use of ELDS into the new TQRIS which is currently being validated (North Carolina Division of Child Development and Early Education, 2013). Although it is uncertain how ELDS monitoring will be imbedded in the new TQRIS, it is recommended that monitoring activities include document reviews, site visits, classroom observations, self-assessments, and interviews (Petersen et al., 2008). There are several important considerations related to monitoring ELDS implementation. First, expectations for ELDS implementation must be clear to teachers and other ECE professionals. Additionally, expectations should be flexible enough that programs can have leeway in demonstrating how they use ELDS. Most importantly, sufficient training as well as other supports must be provided to ECE professionals across program sectors so all programs can be successful in meeting the requirements described in the monitoring plan.

Recommendation eleven. ELDS should be shared with families as well as others who provide care for young children in informal settings.

The last policy recommendation that will be discussed is the need to share information about ELDS with families and the broader community (Bodrova et al., 2004). Although many children are cared for in formal early childhood settings, there are numerous children who are receiving care from family, friends, or neighbors (FFN care). In fact, FFN care is the most common form of non-parental care in the United States. It is estimated that between one-third to one-half of children with employed parents, are receiving FFN care (Susman-Stillman & Banghart, 2008). Family, friends, and neighbors are important individuals that are part of children's microsystem. Thus, children are engaging in proximal processes with these care providers on a regular basis. Considering the vast number of children who are in informal settings prior to kindergarten, there is a great need to develop policies and programs that provide information and support related to using ELDS with other care providers. A major challenge to sharing ELDS with families and others who are providing care to children in informal settings is identifying and accessing this hard to reach population. For example, in North Carolina many children are receiving FFN care and there are no reporting systems or lists identifying these children and families. Therefore, the Division of Child Development and Early Education and community agencies must be strategic about sharing *Foundations* with this population.

Strengths and Limitations

There are several strengths as well as limitations that apply to the current study. The most notable strengths include the timeliness of this research and the use of a community engaged research approach that employed both quantitative and qualitative methods. With the recent reauthorization of the Child Care and Development Block Grant (CCDBG) in November of 2014, the shift from having ELDS to focusing on their

implementation was evident. States, including North Carolina, are now tasked with providing professional development opportunities that incorporate ELDS (CCDBG, 2014). Unfortunately, there was limited research examining the ways in which states have been supporting teachers' implementation of standards through professional development. The current study has provided much needed data that can be utilized by state leaders and other stakeholders, including agencies providing professional development, to make decisions regarding policies and the use of resources related to ELDS.

Another strength of this study was the use of a community-engaged research approach. The Community Research Design and Implementation Team (CRDIT) was an integral part of the research process from the onset of this study. The CRDIT helped to identify research priorities and questions that had critical policy-related implications for early childhood education professional development systems in North Carolina. The CRDIT also played an integral part in both the interpretation and dissemination of results. As part of the dissemination plans, findings from this study have been and will continue to be shared with agencies responsible for providing professional development related to ELDS, so this information can be used in ways that strengthen professional development systems in North Carolina.

Furthermore, this study uses a mixed methods approach, which provides a deeper understanding of *Foundations* professional development and implementation with preschool teachers across North Carolina. Whereas the surveys provided data that addressed teachers' engagement in professional development and *if* they were using *Foundations* for different purposes in their classroom, the interviews and document review showed a more comprehensive picture of *how* teachers were using *Foundations*

as well as the challenges they faced and the supports they required to be able to use *Foundations* more effectively. Additionally, this study gave voice to preschool teachers, and provided them with a platform from which they could share their experiences with *Foundations* as well as their professional development needs.

Despite the contributions the current study makes to the early childhood field, it is not without limitations. Some of the disadvantages are attributed to the methodology and procedures. For example, this study relied on the self-report of teachers for the paper surveys and interviews for the primary component of the study and web-based surveys for the secondary component of the study. Using self-report measures can increase the risk for invalidity when participants feel the need to respond in socially desirable ways (Joinson, 1999). In an effort to reduce this risk, teachers were informed that their personal information, located on the cover page of the survey, would be removed and they would be assigned an ID number. Additionally, teachers were provided with an envelope so they could seal their completed surveys. This kept their responses protected from their supervisor. Identifying information was not collected on the web-based survey for the secondary component of the study, thus reducing the chance that ECE professionals would feel the need to respond in socially acceptable ways.

Additionally, there may also be selection bias for several reasons. Firstly, not all teachers who were provided a survey completed the survey as part of the primary component of the study. Furthermore, only teachers who indicated their willingness to be interviewed on the survey were entered into the pool from which teachers were randomly selected for interviews. There were also concerns with selection bias for the web-based survey used for the secondary component of this study, which may have led to under coverage of specific subgroups of the ECE workforce.

Another potential limitation was the classification system used to assign survey participants into the three professional development groups as part of the primary component of this study. In order to make group comparisons regarding teachers' familiarity, knowledge, and use of *Foundations* as well as their professional development needs, professional development groups were constructed to create maximum variability between groups. Thus, the one-time training/workshop, ongoing training series, and technical assistance/coaching groups were formed. There are some important within-group challenges that must be addressed.

To begin, the one-time training/workshop group primarily consisted of teachers who participated in the *NC Foundations for Early Learning and Development Training* (0.5 CEU) offered by the CCR&R Network, but a small number of teachers participated in other one-time trainings or workshops. It is possible that the content and/or format of these trainings may have been different, but it is likely that all of these one-time trainings provided an overview of *Foundations*. In the ongoing training series group, not all teachers had completed all seven modules, although most had. Furthermore, some teachers had also participated in a one-time training as well as the ongoing training series. There was probably the most variability in the technical assistance/coaching group. First, teachers in this group may have participated in a one-time training and/or the ongoing training series. In spite of this, they were classified into the technical assistance/coaching group because it was believed that receiving technical assistance/coaching from mentor teachers and evaluators as part of the EESLPD program made them uniquely different from the other two professional development groups. Another challenge was that mentor teachers'/evaluators' emphasis on *Foundations* might have varied between teachers they were working with. In spite of

these potential challenges with the classification system, analyses yielded some very interesting differences between these three professional development groups.

Lastly, the research design in the current study was not a random assignment or experimental design. Therefore, claims about causality cannot be made. Although this study demonstrates some correlations and associations of interest among key variables, the study precludes causal conclusions about the differences that were found between professional development groups. The focus of this study was more exploratory than explanatory; the goal was to understand more about professional development participation, uses of *Foundations*, and challenges and needs rather than make causal claims about the most effective types of professional development.

Future Directions and Conclusion

The current study suggests several directions for future research. Although the current study provided information about *if* teachers were using *Foundations* and *how* they used it for different purposes, it does not address the underlying motivations for *why* teachers used *Foundations*. Moving forward, it is important to understand teachers' rationale for using (or not using) *Foundations* in their work with children and families. Another direction for future research includes further exploration of teachers' use of *Foundations* using other measures that do not rely on teachers' self-report. For example, using reports from others such as supervisors or observations may be an effective way to further investigate teachers' use of ELDS. Continuing with the line of research from the current study, future research could consider using a more rigorous design to evaluate the effectiveness of the different types of professional development by addressing some of the limitations previously described.

Future research should also consider how other early childhood professionals are engaging in ELDS professional development and using *Foundations*. Although this study was able to provide much-needed data about *Foundations* implementation with preschool-age teachers, little is known about how infant and toddler teachers are using *Foundations*. Furthermore, there are no data to suggest if ELDS professional development and implementation is reaching other sectors such as family child care homes (FCCH), home visitation programs, and family, friend, and neighbor (FFN) care. Lastly, higher education is an important part of the professional development system (NAEYC and NACCRRA, 2011). While the current study investigated the role of training and technical assistance in ELDS implementation, it did not examine the ways in which institutions of higher education (IHEs) are preparing current and future early childhood professionals to use *Foundations*.

Findings from the current study suggest that ELDS have penetrated various early childhood sectors and preschool teachers across the state are engaging in ELDS professional development and using standards in their work with children and families. Much work, however, remains to be done in regards to the types of supports teachers receive. This includes an expansion of ongoing professional development, technical assistance/coaching, and resources that support teachers' understanding and use of *Foundations* for general purposes as well as specific purposes such as sharing information with families and working with dual language learners and children with disabilities. It is the goal of this study to provide data that will be useful to policy-makers in North Carolina and other states as they make changes to systems that impact ELDS implementation through professional development.

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APPENDIX A
TABLES AND FIGURES

Table 1

Professional Development Categories with Examples and Sample Size

Professional Development Categories	<i>n</i>	PD Opportunities for Recruitment
Training		
• One-Time Training/ Workshop	34	<i>Foundations</i> Overview, CCR&R (0.5 CEU); Workshops at Conferences (e.g., <i>It Starts with Us: Solid Foundations, Successful Futures</i> , Charlotte, NC; North Carolina Association for the Education of Young Children Conference, Raleigh, NC)
• Ongoing Training Series	38	<i>Effective Teacher Practices Supporting NC Foundations for Early Learning and Development</i> (7-module training series), NC Early Learning Network and DPI
Technical Assistance		
• Technical Assistance/ Coaching	38	NC Pre-K teachers in the Early Educator Support, Licensure and Professional Development (EESLPD)

Table 2

Characteristics for Primary Component and Secondary Component

Item Description	Primary Component (<i>n</i> = 110)	Secondary Component (<i>n</i> = 117)
Level of Education		
High School Diploma	2 (1.8%)	1 (1.0%)
Some Undergraduate	2 (1.8%)	1 (1.0%)
Associate's Degree	11 (10.0%)	13 (11.1%)
Bachelor's Degree	78 (70.9%)	57 (48.7%)
Graduate Degree	17 (15.5%)	45 (38.5%)
Degree		N/A
Birth–Kindergarten	66 (60.0%)	
Early Childhood Education	25 (22.7%)	
Related Field (e.g., Child Development, Psychology)	11 (10.0%)	
Other	4 (3.6%)	
No degree selected	4 (3.6%)	
Teaching License		N/A
B-K License	73 (66.4%)	
Other License	10 (9.1%)	
No License	27 (24.5%)	
Program		
Head Start	14 (12.7%)	20 (17.1%)
Public School	34 (30.9%)	11 (9.4%)
Child Care	61 (55.5%)	50 (42.7%)
Family Child Care Home	1 (1.0%)	5 (4.3%)
Institution of Higher Education	0 (0%)	9 (7.7%)
ECE Agency	0 (0%)	9 (7.7%)
Other	0 (0%)	13 (11.1%)
NC Pre-K Teacher	81 (73.6%)	N/A
Served through the NC Pre-K EESLPD Office	38 (34.5%)	N/A
Position		
Infant Toddler Teacher	0 (0%)	5 (4.3%)
Preschool Teacher	110 (100%)	37 (31.6%)
Director/Administrator	0 (0%)	25 (21.4%)
Trainer/TA Provider	0 (0%)	25 (21.4%)
Higher Education	0 (0%)	7 (6.0%)
Other	0 (0%)	18 (15.4%)

Table 3

Participation in Foundations Professional Development

Type of Professional Development	Total Participants (N = 110)	Head Start (n = 14)	Public School (n = 34)	Child Care (n = 61)	FCCH (n = 1)
Training					
<i>NC Foundations for Early Learning and Development</i> (CCR&R 0.5 CEU Training)	67 (60.9%)	9 (64.3%)	9 (26.5%)	48 (78.7%)	1 (100.0%)
<i>Effective Teacher Practices Supporting NC Foundations for Early Learning and Development</i> (7 Module Training Series)	54 (49.1%)	12 (85.7%)	30 (88.2%)	11 (18.0%)	1 (100.0%)
Module 1	54 (49.1%)	12 (85.7%)	30 (88.2%)	11 (18.0%)	1 (100.0%)
Module 2	53 (48.2%)	12 (85.7%)	30 (88.2%)	10 (16.4%)	1 (100.0%)
Module 3	48 (43.6%)	11 (78.6%)	30 (88.2%)	7 (11.5%)	0 (0.0%)
Module 4	48 (43.6%)	11 (78.6%)	30 (88.2%)	7 (11.5%)	0 (0.0%)
Module 5	44 (40.0%)	7 (50.0%)	30 (88.2%)	7 (11.5%)	0 (0.0%)
Module 6	44 (40.0%)	7 (50.0%)	30 (88.2%)	7 (11.5%)	0 (0.0%)
Module 7	44 (40.0%)	7 (50.0%)	30 (88.2%)	7 (11.5%)	0 (0.0%)
In-service Training at Place of Employment	25 (22.7%)	12 (85.7%)	8 (23.5%)	5 (8.2%)	0 (0.0%)
<i>It Starts with Us: Solid Foundations, Successful Futures</i> (Conference)	11 (10.0%)	0 (0.0%)	1 (2.9%)	10 (16.4%)	0 (0.0%)
Other Workshops	9 (8.2%)	5 (35.7%)	3 (8.8%)	1 (1.6%)	0 (0.0%)
Technical Assistance					
Technical Assistance from a supervisor or administrator	48 (43.6%)	13 (92.9%)	15 (44.1%)	19 (31.1%)	1 (100.0%)
Mentoring relationship with a more experienced teacher	41 (37.4%)	8 (57.1%)	9 (26.5%)	24 (39.3%)	0 (0.0%)
Coaching from an NC Pre-K EESLPD Office Mentor Teacher or Evaluator	38 (34.5%)	13 (92.9%)	0 (0.0%)	25 (41.0%)	0 (0.0%)
Technical Assistance from Smart Start or CCR&R Agency	27 (24.5%)	3 (21.4%)	4 (11.8%)	19 (31.1%)	1 (100.0%)

Table 4

Descriptive Statistics for Items Related to Teachers' Knowledge of *Foundations*

Description of Item	<i>n</i>	Mean	<i>SD</i>	Correct Responses
Age Groups Used to Organize Developmental Indicators in <i>Foundations</i>				
a. Infants (Birth–12 Months)*	110	0.47	0.50	52 (47.3%)
b. Younger Toddlers (8–21 Months)*	110	0.45	0.50	50 (45.5%)
c. Older Toddlers (18–36 Months)*	110	0.47	0.50	52 (47.3%)
d. Infants and Toddlers (Birth–36 Months)	110	0.70	0.46	77 (70.0%)
e. Younger Preschoolers (36–48 Months)*	110	0.63	0.48	70 (63.6%)
f. Older Preschoolers (48–60 Months)*	110	0.71	0.45	79 (71.8%)
g. Preschoolers (3–5 Years)	110	0.35	0.48	39 (35.5%)
h. Kindergarteners (5–5 Years)	110	0.79	0.41	87 (79.1%)
Domains Included in <i>Foundations</i>				
a. Approaches Toward Play and Learning*	110	0.99	0.10	109 (99.1%)
b. Children with Disabilities	110	0.63	0.48	70 (63.6%)
c. Cognitive Development*	110	0.96	0.19	106 (96.4%)
d. Creative Arts	110	0.66	0.47	73 (66.4%)
e. Dual Language Learning (DLL)	110	0.56	0.50	62 (56.4%)
f. Emotional and Social Development*	110	0.97	0.16	107 (97.3%)
g. Health and Physical Development*	110	0.94	0.25	103 (93.6%)
h. Language Development and Communication*	110	0.96	0.19	106 (96.4%)
i. Mathematics	110	0.61	0.49	68 (61.8%)
j. Science	110	0.67	0.47	74 (67.3%)
True and False Items				
a. Goals are divided into 6 domains	109	0.47	0.50	51 (46.4%)
b. Can be used as an assessment	109	0.39	0.49	43 (39.1%)
c. Describes expectations children will reach toward the beginning of their age levels	109	0.32	0.47	35 (31.8%)
d. Includes developmental indicators related to DLL	108	0.31	0.46	33 (30%)
e. Can be used in place of classroom curriculum	110	0.82	0.39	90 (81.8%)
g. Organized in developmental continuum (Birth through 60+ months)*	109	0.95	0.21	104 (99.1%)
h. There are three age groupings	110	0.54	0.50	59 (53.6%)
j. Includes separate goals for children w/ disabilities	110	0.63	0.49	69 (62.7%)

Note. (1) True and false item f and item i was deleted due to unacceptable levels of skewness. (2) Items with an asterisk were correct/true answers. (3) *n* = 110. (4) For complete descriptions of true/false items see Appendix A.

Table 5

Descriptive Statistics for Implementation of *Foundations*

Item Description	<i>n</i>	<i>M</i>	<i>SD</i>
General Implementation of <i>Foundations</i>			
Observe children to guide lesson plans	110	3.67	1.06
Document children's learning (e.g., portfolios)	110	3.62	1.17
Plan small and large group activities	110	3.60	1.13
Learn about children's development	110	3.56	1.07
Develop learning centers	110	3.48	1.06
Plan circle time activities	110	3.47	1.13
Observe children and use for child assessments	110	3.45	1.24
Help plan transitional activities between classrooms or schools	110	3.32	1.25
Select classroom materials	110	3.27	1.15
Help decide what books to make available or read to children	110	3.26	1.25
Prepare the outdoor learning environment	110	3.21	1.21
Implementation of <i>Foundations</i> with Families			
Describe how/what children are learning in my classroom support their readiness for success in school	110	3.45	1.21
Show families how what you are teaching fits with the children's level of development	110	3.40	1.24
Share information with families about their own child's development	110	3.40	1.21
Share activities with families that support their child's development	110	3.38	1.28
Answer family questions/concerns about their child's development	110	3.35	1.22
Share knowledge about general child development with families	110	3.20	1.18
Implementation of <i>Foundations</i> with Dual Language Learners (DLL)*			
Adapt activities for children who are DLL	91	2.92	1.33
Set goals for children who are DLL	91	2.87	1.34
Learn specific strategies for working with children who are DLL	91	2.87	1.38
Learn about children who are DLL	91	2.86	1.31
Talk to families about DLL	91	2.81	1.39
Learn about the DLL learning process (i.e., stages of DLL)	91	2.78	1.35
Implementation of <i>Foundations</i> with Children with Disabilities**			
Communicate with therapists and specialists	79	3.35	1.37
Understand the individualized development of children with disabilities	79	3.32	1.33
Select appropriate materials	79	3.32	1.31
Talk to families about children's development	79	3.32	1.37
Adapt activities	79	3.29	1.28
Set individualized goals for children	79	3.28	1.32
Set goals/help in writing IEP	79	3.09	1.38

*N = 91 teachers who have worked with DLL in the past two years

**N = 79 teachers who have worked with children with disabilities in the past two years

Table 6

Analysis of Variance Results for *Familiarity with Foundations* Scores and Sub-scores by Professional Development Type

Variable	Professional Development Type						<i>F</i>	<i>df</i>	<i>p</i>	Effect Size (η ²)
	One-Time Training/ Workshop (<i>n</i> = 34)		Ongoing Training Series (<i>n</i> = 38)		Technical Assistance/ Coaching (<i>n</i> = 38)					
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Familiarity Summary Score	2.62	0.44	3.27	0.73	2.98	0.69	9.40	109	< .001	0.15
Familiarity w/ Preschool	3.09	0.47	3.92	0.90	3.65	0.82	11.05	109	< .001	0.17
Familiarity w/ Infants and Toddlers	1.93	0.74	2.26	0.71	1.90	0.75	2.74	109	0.069	
Familiarity w/ Special Circumstances	2.10	0.85	2.68	0.99	2.47	0.92	3.58	109	0.058	

Table 7

Post Hoc Results for *Familiarity with Foundations* Score by Professional Development Type

Professional Development Type	<i>n</i>	<i>M</i>	<i>SD</i>	Mean Differences (Effect Sizes are indicated in Parentheses)		
				1	2	3
1. One-Time Training/Workshop	34	2.62	0.44	--		
2. Ongoing Training Series	38	3.27	0.73	-0.65 ^{***} (1.06)	--	
3. Technical Assistance/Coaching	38	2.98	0.69	-0.37 [*] (0.62)	0.29	--

Note. ^{***} $p < 0.001$; ^{**} $p < 0.01$; ^{*} $p < 0.05$

Table 8

Post Hoc Results for *Familiarity with Foundations Information Related to Preschoolers*
 Subscale Score by Professional Development Type

Professional Development Type	<i>n</i>	<i>M</i>	<i>SD</i>	Mean Differences (Effect Sizes are indicated in Parentheses)		
				1	2	3
1. One-Time Training/Workshop	34	3.09	0.47	--		
2. Ongoing Training Series	38	3.92	0.90	-0.83 ^{***} (1.16)	--	
3. Technical Assistance/Coaching	38	3.65	0.82	-0.56 ^{**} (0.84)	0.29	--

Note. ^{***} $p < 0.001$; ^{**} $p < 0.01$; ^{*} $p < 0.05$

Table 9

Descriptive Statistics and Post Hoc Results for *Knowledge of Foundations* Scores by Professional Development Type

Professional Development Type	<i>n</i>	<i>M</i>	<i>SD</i>	Mean Differences (Effect Sizes are indicated in Parentheses)		
				1	2	3
1. One-Time Training/Workshop	34	14.76	5.24	--		
2. Ongoing Training Series	38	19.21	3.90	-4.45*** (0.96)	--	
3. Technical Assistance/Coaching	38	16.68	4.66	-1.92	2.53* (0.54)	--

Note. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table 10

Descriptive Statistics and Post Hoc Results for *General Implementation of Foundations*
Scores by Professional Development Type

Professional Development Type	<i>n</i>	<i>M</i>	<i>SD</i>	Mean Differences (Effect Sizes are indicated in Parentheses)		
				1	2	3
1. One-Time Training/Workshop	34	3.07	1.21	--		
2. Ongoing Training Series	38	3.53	0.79	-0.47	--	
3. Technical Assistance/Coaching	38	3.70	0.87	-0.64* (0.60)	-0.17	--

Note. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table 11

Descriptive Characteristics of Supports Needed for *Foundations* Implementation

Support Needed	<i>M</i>	<i>SD</i>
PD Related to the Following Topics:		
a. Using Foundations with children with disabilities	3.96	1.07
b. Using Foundations with DLL	3.94	1.12
c. Using Foundations with families	3.84	1.05
d. Professional Learning Communities (PLC) with a focus on Foundations	3.83	1.09
e. Integrating Foundations into lesson plan	3.77	1.08
f. Integrating Foundations into curriculum	3.73	1.06
g. Coaching specific to using Foundations	3.67	1.12
Resources/Print Materials		
a. Example activities for families that incorporate <i>Foundations</i>	4.16	0.90
b. Example lesson plans that incorporate <i>Foundations</i>	4.08	1.08
c. Written resources that describe how to use <i>Foundations</i> with children with disabilities	4.04	1.02
d. Written resources that describe how to use <i>Foundations</i> with DLL	4.02	1.08
e. Written resources that describe how to use <i>Foundations</i> with families	4.02	1.02
f. Access to assessments aligned to <i>Foundations</i>	3.97	1.02
g. Access to curricula aligned with <i>Foundations</i>	3.96	1.07
h. A copy of <i>Foundations</i>	3.75	1.52
Other Miscellaneous Supports		
a. Financial support to attend <i>Foundations</i> training outside my program	3.94	1.26
b. Opportunities to work with other teachers to create lesson plans that incorporate <i>Foundations</i>	3.86	1.22

Note. *n* = 110; range = 4 for all items

Table 12

Descriptive Characteristics of Challenges/Barriers to *Foundations* Implementation

Challenges/Barriers	<i>M</i>	<i>SD</i>
Lack of time to attend professional development related to <i>Foundations</i>	2.46	1.27
Lack of financial resources to attend professional development	2.35	1.34
No time to plan classroom activities using <i>Foundations</i>	2.35	1.38
Lack of available professional development related to using <i>Foundations</i>	2.11	1.24
Insufficient resources regarding how to use <i>Foundations</i>	2.05	1.21
Limited awareness of trainings on <i>Foundations</i>	1.99	1.23
Lack of support from administrator (e.g., principle, director)	1.81	1.15
Limited awareness of the <i>Foundations</i> document	1.66	1.02
No access to the <i>Foundations</i> document	1.29	0.77

Note. *n* = 110; range = 4 for all items

Table 13

Kruskal-Wallis Analysis of Variance Results for Professional Development Needs by Professional Development Type

Support Needed	χ^2	df	p	(η^2)
Professional Development Needs:				
a. Using <i>Foundations</i> with children with disabilities	5.05	2	0.080	
b. Using <i>Foundations</i> with DLL	5.45	2	0.065	
c. Using <i>Foundations</i> with families	8.21	2	0.016	
d. Professional Learning Communities (PLC) with a focus on <i>Foundations</i>	3.87	2	0.145	
e. Integrating <i>Foundations</i> into lesson plan	6.10	2	0.047	
f. Integrating <i>Foundations</i> into curriculum	4.66	2	0.097	
g. Coaching specific to using <i>Foundations</i>	2.52	2	0.283	
Resources/Print Materials				
h. Example activities for families that incorporate <i>Foundations</i>	14.60*	2	0.001	0.13
i. Example lesson plans that incorporate <i>Foundations</i>	13.87*	2	0.001	0.13
j. Written resources that describe how to use <i>Foundations</i> with children with disabilities	8.79	2	0.012	
k. Written resources that describe how to use <i>Foundations</i> with DLL	10.79	2	0.005	
l. Written resources that describe how to use <i>Foundations</i> with families	8.31	2	0.016	
m. Access to assessments aligned to <i>Foundations</i>	6.90	2	0.032	
n. Access to curricula aligned with <i>Foundations</i>	11.94	2	0.003	
o. A copy of <i>Foundations</i>	10.89	2	0.004	
Miscellaneous Other Supports				
p. Financial support to attend <i>Foundations</i> training outside my program	4.92	2	0.085	
q. Opportunities to work with other teachers to create lesson plans that incorporate <i>Foundations</i>	4.31	2	0.116	

Note. $N = 110$; * $p < 0.003$

Table 14

Early Childhood Professionals' Participation in *Foundations* Training

Type of Training	Total Participants (<i>n</i> = 59)
<i>NC Foundations for Early Learning and Development</i> (CCR&R 0.5 CEU Training)	31 (52.5%)
<i>Effective Teacher Practices Supporting NC Foundations for Early Learning and Development</i> (7 Module Training Series)	16 (27.1%)
Module 1	12 (75.0%)
Module 2	9 (56.3%)
Module 3	10 (62.5%)
Module 4	9 (56.3%)
Module 5	9 (56.3%)
Module 6	9 (56.3%)
Module 7	8 (56.3%)
In-service Training at Place of Employment	10 (16.9%)
<i>It Starts with Us: Solid Foundations, Successful Futures</i> (Conference)	6 (10.2%)
Other Trainings	13 (22.0%)

Note: *n* = 59 ECE professionals who received some type of training

Table 15

Descriptive Characteristics of Challenges/Barriers to *Foundations* Implementation

Challenges/Barriers	<i>M</i>	<i>SD</i>
Limited awareness of trainings on <i>Foundations</i>	2.46	1.35
Lack of time to attend professional development related to <i>Foundations</i>	2.33	1.28
Lack of financial resources to attend professional development	2.32	1.39
Lack of available professional development related to using <i>Foundations</i>	2.29	1.33
Insufficient resources regarding how to use <i>Foundations</i>	2.22	1.30
No time to plan professional activities/responsibilities (e.g., planning classroom activities) using <i>Foundations</i>	2.13	1.35
Limited awareness of the <i>Foundations</i> document	1.87	1.23
Access to the <i>Foundations</i> document	1.74	1.25
Lack of support from administrator (e.g., principle, owner, director, supervisor)	1.53	1.05

Note. *n* = 117; range = 4 for all items

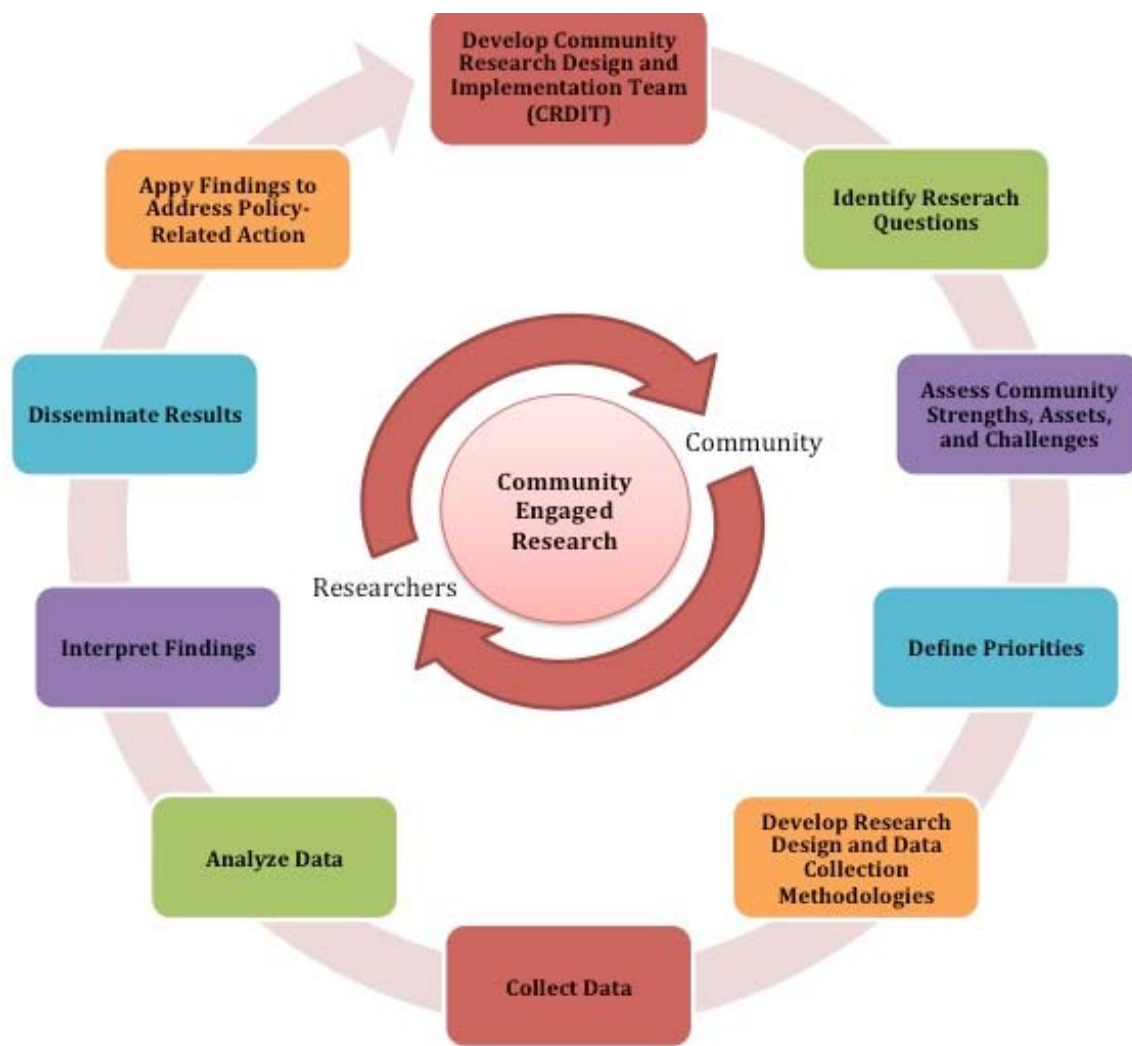


Figure 1. Community Engaged Research Process.

Weekly Planning Form
 Week of: September 28, 2015 Study/Project: My Community
 Teacher: April Assistant: Belinda

	Monday	Tuesday	Wednesday	Thursday	Friday
Daily Gross Motor Activity	NO NC PRE-K	Obstacle course F HPD 4 CC 5	Hopscotch F HPD 4 CC 5	Simon Says F HPD 4 CC 5	Races F HPD 4 CC 5
Group Time (songs, books, recap the day, games, discussion, etc.)	NO NC PRE-K	Good Morning Wishing Well Tell us about our community. How are you a part of it? <u>When I Grow Up</u> Questions: What do you want to be when you grow up? Why? F ESD 4 CC 3a	Good Morning Wishing Well <u>Machines</u> What kinds of community helpers are in our community? Questions: Have you seen any of these machines? Where? What were they doing? F HPD 4 CC 5	Good Morning Wishing Well How do community helpers help us? <u>Freight Train</u> Questions: What kinds of trains have you seen in our community? F HPD 4 CC 5	Good Morning Wishing Well How do you have fun in our community? <u>Children's Choice</u> Questions: What was your favorite part of the book? F HPD 4 CC 5
Small Group Activities:	Read stories and discuss the book, the story and see how students relate that info to what they already know F LDC 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 CC 8a, 8b, 9a, 9b, 9c, 9d, 10a, 10b, 17a, 18a, 18b, 18c				
Differentiation	Ask some students to identify parts of a book	Ask some students to make predictions about the story	Ask some students to comment on the story		

Weekly Planning Form
 Week of: September 28, 2015 Study/Project: My Community
 Teacher: April Assistant: Belinda

Blocks Add pictures of community buildings and landmarks F CD 9 CC 32	Dramatic Play Fire hats, books, police props, etc. F CD 4 CC 14a	Math Graph answers to questions about our community Identify different shapes in structures students see/build F CD 12 CC 21b	Family/Community Involvement: Tell us where you go in the community for family fun
Art Can you paint something in our community? F CD 4 CC 33	Library <u>When I Grow Up, Machines, Freight Train</u> F LDC 8 CC 18a	Discovery/Science Add natural objects from our community F CD 15 CC 28	
Sand/Water Table Add vehicles and people from the block area F CD 14 CC 24	Music & Movement The Wheels On The Bus F CD 5 CC 35	Diversity/Global Awareness Heritage Box F CD 6 CC 29	
Technology Magnets F CD 15 CC 28	Cooking/Nutrition What kinds of crops are grown in our community? F CD 9 CC 30	Rainy Day Activity Yoga F HPD 4 CC 5	Writing/Fine Motor Pictures of signs from our community, paper, and pencils F LDC 15 CC 19b

Note. Foundations Goals include an "F" followed by the Domain Abbreviation and Goal Number (e.g., F CD 9 = Foundations, Cognitive Development, Goal 9).

Figure 2. Example Lesson Plan One.

	Monday	Tuesday	Wednesday	Thursday	Friday
Interest Areas Picnic Prop Box in dramatic play	Insects (real & fake) magnifying glasses, etc in Science center APL-2m; CD-15p	Bug puzzles & lacing cards in manipulatives HPD-5n	Construct a bee hive in the block center APL-3r	Insects, rocks, etc in sandbox APL-8i	Insect vs. other animals sorting on Smartboard CD-1n
Large Group Make KWL chart	Insect Inspection pass out pictures & plastic bugs -How many body parts, legs, antennae, etc? CD-1k	Compare & Contrast two different bugs - make a Venn Diagram with pictures LDC-13g	What is Your Favorite Bug? graph made on Smartboard E=O-2n; CD-1n	Bug Video on YouTube (5:30) Did you see any of these on the playground today? Anywhere else?	Revisit KWL chart & make additions - use info to plan next week LDC-1b
Read-Aloud	Bugs! Bugs! Bugs! By Jennifer Dussling -Have you seen any of these bugs before? Where? LDC-9e	The Ants Go Marching -Sing & read the Storybook LDC-7o	Bug Safari by Bob Barner -Take a picture walk & make predictions LDC-9t	Bees and Wasps by David Cutts -video on Bee Keeper (YouTube 3:10) -Have you seen any of the local bee keepers?	A Fly Went By by Mike McIntock -story sequence activity
Small Group	Read The Very Hungry Caterpillar then play Roll a Hungry Caterpillar math & drawing game LDC-10n	Bug Nature Walk - Draw pictures and observations to share w/ the class HPD-5n	Work on book writing and illustrating LDC-8n APL-11j;g	Sort bugs by how they move - Do they walk, fly, crawl, etc? CD-11p; E=O-4t	Make ant hills in a cup for dessert! ^{HPD-1b} -pudding, Graham, cracker, raisins -Follow recipe card
Outdoor Experiences: ^{HPD-2} Hop like Frogs to catch flies; Bubbles w/ a fly swatter; 'Butterfly Dancing'; Ants go marching					
Family Partnerships: Invite families to collect & bring in bugs/insects to share; continue bringing photos for map					
Wow! Experiences: Catch a few bugs & observe them in bug catcher CD-14k					

Individual Child Planning	
Michael - manage & express feelings appropriately ^{E=O-6p}	Kayla - participate during songs, rhymes, etc. LDC-1b
Shaila - speak loud enough for others to hear ^{LDC-4i}	Corbin - turn taking, sharing, conflict resolution ^{E=O-4p;14t}
Emma - use calming strategies consistently ^{HPD-6j}	Graison - do challenging things independently ^{APL-5b}
Dixie - participate in group discussions ^{LDC-7o}	Dalton - follow rules during transitions ^{E=O-5g}
Colton - turn taking, sharing, conflict resolution ^{E=O-4p;14t}	Diana - repeat rhythmic patterns ^{LDC-11j}
Cicero - work on building fine motor skills ^{HPD-5n}	Tar-in - compare objects in a set ^{CD-1n}
Santiago - follow multi-step directions ^{LDC-1p}	Maddie - letter sound associations ^{LDC-12i}
Kevin - ask for help when it's needed ^{E=O-3s}	Kaylyn - sustain complex play in groups ^{APL-3r}
GiGi - balancing (use beam outside) ^{HPD-4g}	Alexis - describe places and/or experiences with more detail ^{CD-9f}
Noah - explain how solutions to problems were found ^{APL-6g}	

Note. The unit of study was "Bugs and Insects." *Foundations* Goals include the Domain Abbreviation, Goal Number, and Indicator Letter (e.g., APL-2m = Approaches to Play and Learning, Goal 2, Indicator Letter m)

Figure 3. Example Lesson Plan Two.

Anecdotal Record Sheet

Child's Name: OliverDevelopmental Domain: Emotional / Social

Date	Creative Curriculum Goal	Foundations Goal	Anecdotal Notes
9/2/15	1c	ESD 1,2	Oliver used the bathroom independently.
9/3/15	2a	ESD 1,2	Oliver put a "necklace" on me. I said "I love it! Thank you!" and he smiled from ear to ear.
9/8/15	2b	ESD 7	Oliver I identified reasons for someone to get angry (hit)
9/8/15	2a	ESD 3	Oliver walked up to Ms. Belinda, gave her a hug, then walked back to his seat.
9/21/15	2d	ESD 4	Oliver said Aspen is his friend.
9/21/15	2b	ESD 7	Oliver handed me a ball when I asked "If I was crying what would you do to help me be happy."

Figure 4. Anecdotal Observation Form.

THANK YOU!!!!

SECTION 1. BACKGROUND INFORMATION

1. What is your current position? (check one)

- ☐ Preschool Teacher
 ☐ Preschool Assistant Teacher
 ☐ Infant/Toddler Teacher
☐ Infant/Toddler Assistant Teacher
 ☐ Director or Administrator
 ☐ Other (specify) _____

2. What is the highest level of education you have completed? (check one)

- ☐ GED
 ☐ High School Diploma
 ☐ Some Undergraduate Courses
☐ Associate's Degree
 ☐ Bachelor's Degree
 ☐ Graduate Degree

3. Do you hold a degree in any of the following areas?

- ☐ NC - Birth - Kindergarten
 ☐ Early Childhood Education
 ☐ Early Childhood Special Education
☐ Related Field (e.g., Child Development, Psychology, etc.)
 ☐ Other _____

4. What teaching license to you currently possess?

- ☐ B-K License
 ☐ Other (specify) _____
 ☐ I do not have a teaching license

5. Are you receiving mentoring and evaluation support services through the NC Pre-K program (Early Educator Support, Licensure and Professional Development, EESLPD)?

- ☐ Yes (specify year in program) _____ years
 ☐ No

6. Including this year, how many years have you been working with children 0–5 years old in a classroom?

_____ years

7. Check the box that best describes your center or program. (check one)

- ☐ Head Start
 ☐ Public School
 ☐ Child Care
☐ Family Child Care Home
 ☐ Other _____

8. Are you a NC Pre-K lead teacher who is currently working in a NC Pre-K funded classroom?

- ☐ Yes
 ☐ No

9. What age group do you primarily work with? (check one)

- ☐ Infants/Toddlers (0 - 36 months)
 ☐ Younger Preschoolers (36 - 48 months)
 ☐ Older Preschooler (48 - 60 months)

10. How many hours of professional development related to your position do you typically get each year?

_____ hours

11. Are you familiar with the following version(s) of *Foundations*? (check all that apply)

- ☐ Original *Foundations* for preschoolers (published in 2005)
 ☐ Revised *Foundations* (published in 2013)
☐ Original *Foundations* for infants and toddlers (published in 2008)
 ☐ I have never heard of *Foundations*

12. Which version(s) of *Foundations* do you currently use in your classroom? (check all that apply)

- ☐ Original *Foundations* for preschoolers (published in 2005)
 ☐ Revised *Foundations* (published in 2013)
☐ Original *Foundations* for infants and toddlers (published in 2008)
 ☐ I do not use *Foundations*

13. If you have a copy of the revised *Foundations*, where did you get it?

_____ ☐ I do not have a copy

SECTION 2. FOUNDATIONS SUPPORT

DIRECTIONS: In the next section, we are interested in learning about the types of professional development you have received pertaining to the REVISED Foundations (published in 2013). For the purpose of this survey, we are interested in learning about two types of professional development: 1.) trainings (e.g., workshops, seminars, webinars) and 2.) mentoring and coaching. With this in mind, please answer the following questions.

1. What **Foundation** trainings have you attended in the last year? (check all that apply)

☐ *Effective Teacher Practices Supporting NC Foundations for Early Learning and Development*, Dpt. Public Instruction

(Check **all** the modules you have completed)

☐ Module 1: Overview

☐ Module 5: Behavior Expectations & Rules

☐ Module 2: Formative Assessment

☐ Module 6: Schedules & Routines

☐ Module 3: Promoting Positive Relationships

☐ Module 7: Directions & Feedback

☐ Module 4: Classroom Design

☐ *NC Foundations for Early Learning and Development*, Local Child Care Resource & Referral (CCR&R), (0.5 CEU)

☐ *It Starts with Us: Solid Foundations, Successful Futures*, Foundations Conference in Charlotte, NC (3/14/2015)

☐ Other workshops such as conferences (specify) _____

☐ In-service Training with my Program/Child Care Center

☐ Other (specify) _____

☐ I have not received any training on *Foundations* within the last year.

2. If you received professional development specifically on **Foundations** within the last year, approximately how many **hours** of training did you receive?

_____ hours

3. Have you received professional development (outside a college course) on other topics (e.g., Literacy, Mathematics, Working with Children with disabilities) that have incorporated **Foundations** into the training?

☐ Yes (specify below)

☐ No

_____ (Topic) _____ (Hours)

_____ (Topic) _____ (Hours)

4. Besides training, what other ways does your center/school help you use **Foundations**? (check all that apply)

☐ Support with lesson planning

☐ Support in using *Foundations* to set goals for children

☐ Provide resources to use *Foundations*

☐ Support in using *Foundations* to improve my teaching

☐ Support with sharing *Foundations* with families

☐ Other (specify) _____

5. What type of technical assistance have you had regarding how to use **Foundations**? (check all that apply)

☐ Technical assistance (e.g., coaching, mentoring) from a supervisor or administrator in my program

☐ Mentoring relationship with a more experienced teacher

☐ Coaching from an NC Pre-K EESLPD Office Mentor Teacher or Evaluator

☐ Technical assistance from Smart Start or Child Care Resource and Referral Agency (CCR&R)?

☐ Other (specify) _____

6. What has been the greatest support in helping you understand and use **Foundations**?

SECTION 3. FOUNDATIONS KNOWLEDGE & FAMILIARITY

DIRECTIONS: The following questions ask about your knowledge and familiarity with the **revised Foundations** (2013). When answering, please do not look at a copy of the revised *Foundations*. We are just interested in what you think “off the top of your head” rather than what you can find in the *Foundations* book.

1. Which of the following age groups are used to organize the developmental indicators in the revised *Foundations*? (check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Infants (0 – 12 months) | <input type="checkbox"/> Younger Preschoolers (36 – 48 months) |
| <input type="checkbox"/> Younger Toddlers (8 – 21 months) | <input type="checkbox"/> Older Preschoolers (48 – 60 months) |
| <input type="checkbox"/> Older Toddlers (18 – 36 months) | <input type="checkbox"/> Preschoolers (3 – 5 years) |
| <input type="checkbox"/> Infants and Toddlers (0 – 36 months) | <input type="checkbox"/> Kindergarten (5 – 6 years) |

2. Which domains (i.e., areas of children’s development) are included in the revised *Foundations*? (check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Approaches To Play and Learning | <input type="checkbox"/> Emotional and Social Development |
| <input type="checkbox"/> Children with Disabilities | <input type="checkbox"/> Health and Physical Development |
| <input type="checkbox"/> Cognitive Development | <input type="checkbox"/> Language Development and Communication |
| <input type="checkbox"/> Creative Arts | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Dual Language Learning | <input type="checkbox"/> Science |

3. Please answer “true” or “false” to the following statements about <i>Foundations</i> :	TRUE	FALSE
a. The goals and developmental indicators are divided into six domains of learning.	<input type="checkbox"/> &	<input type="checkbox"/> &
b. Developmental indicators can be used as an assessment checklist or evaluation tool.	<input type="checkbox"/> &	<input type="checkbox"/> &
c. Generally, the developmental indicators describe expectations that many children will reach toward the beginning of their respective age level.	<input type="checkbox"/> &	<input type="checkbox"/> &
d. <i>Foundations</i> include specific developmental indicators that relate to dual language learners (i.e., children from families who primarily speak a language other than English)?	<input type="checkbox"/> &	<input type="checkbox"/> &
e. <i>Foundations</i> can be used in the place of your classroom curriculum.	<input type="checkbox"/> &	<input type="checkbox"/> &
f. Developmental indicators are the broad areas of learning or development that is being addressed .	<input type="checkbox"/> &	<input type="checkbox"/> &
g. The developmental indicators described in <i>Foundations</i> are organized in a developmental continuum of learning from birth to 60+ months.	<input type="checkbox"/> &	<input type="checkbox"/> &
h. <i>Foundations</i> is divided into three age groupings: 1) Infants (0 – 18 months), 2) Toddlers (18 – 36 months), and 3) Preschoolers (36 – 60+ months)	<input type="checkbox"/> &	<input type="checkbox"/> &
i. <i>Foundations</i> is organized into domains, goals, and developmental indicators by age groups.	<input type="checkbox"/> &	<input type="checkbox"/> &
j. <i>Foundations</i> includes separate goals that specifically relate to children with disabilities.	<input type="checkbox"/>	<input type="checkbox"/>

DIRECTIONS: When answering the following questions (4 – 7), keep in mind that **extremely familiar*** is defined as having the ability to recall specific goals, developmental indicators, and strategies without having to look at revised *Foundations* (2013).

4. How familiar are you with the goals and developmental indicators pertaining to:					
	Not at All Familiar 1	Slightly Familiar 2	Moderately Familiar 3	Very Familiar 4	Extremely Familiar* 5
Infants?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Younger Toddlers?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Older Toddlers?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Younger Preschoolers?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Older Preschoolers?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &

5. How familiar are you with the information in the back of the revised <i>Foundations</i> and in the yellow text boxes that pertains to:					
	Not at All Familiar 1	Slightly Familiar 2	Moderately Familiar 3	Very Familiar 4	Extremely Familiar* 5
Dual Language Learners?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Children with Disabilities?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &

6. How familiar are you with the goals and indicators in the following specific domains of learning: Note: There may be other domains of learning that are not listed here.					
	Not at All Familiar 1	Slightly Familiar 2	Moderately Familiar 3	Very Familiar 4	Extremely Familiar* 5
Approaches to Play and Learning?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Emotional & Social Development?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Health & Physical Development?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Language Development & Communication?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Cognitive Development?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &

7. How familiar are you with the strategies for teaching for:					
	Not at All Familiar 1	Slightly Familiar 2	Moderately Familiar 3	Very Familiar 4	Extremely Familiar* 5
Infants and Toddlers?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &
Preschoolers?	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &	<input type="checkbox"/> &

SECTION 4. FOUNDATIONS IMPLEMENTATION

1. How often do you create a lesson plan?

☐ Daily ☐ Weekly ☐ Twice Monthly ☐ Monthly ☐ Never

2. How often do you use a lesson plan you created?

☐ Daily ☐ Weekly ☐ Twice Monthly ☐ Monthly ☐ I don't create lesson plans

3. How often do you use *Foundations* when creating lesson plans?

☐ Always ☐ Almost Always ☐ Sometimes ☐ Rarely ☐ Never ☐ I don't create lesson plans

4. On a scale of 1 to 5, how often do you use the revised *Foundations* for each of the following:

	Not at All 1	A little of the time 2	Some of the time 3	Almost Always 4	Always 5
a. Learn about children's development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Plan small and large group activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Plan circle-time activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Select classroom materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Develop learning centers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Prepare the outdoor learning environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Plan transitional activities between classrooms or schools (e.g., transition from preschool to kindergarten).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Decide what books to make available or read to children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Observe children and use for child assessments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Observe children to guide your lesson plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Document children's learning (e.g., portfolios)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Please describe any additional ways you use *Foundations*.

6. In your opinion, how important is it to use *Foundations* in your work as a teacher?

☐ Not at all important ☐ A little ☐ Somewhat ☐ A lot ☐ Very Important

7. On a scale of 1 to 5, how often do you use <i>Foundations with families</i> to:					
	Not at All 1	A little of the time 2	Some of the time 3	Almost Always 4	Always 5
a. Share knowledge about general child development with families	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Share information with families about their own child's development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Answer family questions/concerns about their child's development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Show families how what you are teaching fits with the children's level of development (as it is described in the age levels within <i>Foundations</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Describe to families how what children are learning in your classroom supports their readiness for success in school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Share activities with families that support their child's development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Please describe any additional ways you use *Foundations with families*?

9. Have you ever heard of *Foundations with Families* (published in 2013)?

☐ Yes ☐ No

10. Do you provide this guide to families?

☐ Yes ☐ No

11. If so, how do you provide this guide to families? (check all that apply)

☐ Home Visits ☐ Parent-Teacher Conferences ☐ Posted in my classroom
☐ Parent Orientation ☐ Open House ☐ I do not provide this guide to families.
☐ Other (specify) _____

12. In your opinion, how important is it to share information about *Foundations with families*?

☐ Not at all important ☐ A little ☐ Somewhat ☐ A lot ☐ Very Important

SECTION 5. FOUNDATIONS IMPLEMENTATION WITH DUAL LANGUAGE LEARNERS

1. Within the last two years, have you worked with children who are Dual Language Learners (DLL) (i.e., children from families who primarily speak a language other than English)?

☐ Yes ☐ No (if no, skip to section 6)

2. On a scale of 1 to 5, how often do you refer to <i>Foundations</i> when working with children who are DLL to:					
	Not at All 1	A little of the time 2	Some of the time 3	Almost Always 4	Always 5
a. Learn about children who are DLL?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Adapt activities for children who are DLL?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Set goals for children who are DLL?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Learn specific strategies for working with children who are DLL?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Learn about the dual language learning process (i.e., stages of DLL learning)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Talk to families about DLL?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Other ways (specify) _____					

SECTION 6. FOUNDATIONS IMPLEMENTATION WITH CHILDREN WITH DISABILITIES

1. Within the last two years, have you worked with children who have an Individualized Education Program (IEP)?

☐ Yes ☐ No (if no, skip to Section 7 on the next page)

2. On a scale of 1 to 5, how often do you refer to <i>Foundations</i> when working with children who have an IEP to:					
	Not at All 1	A little of the time 2	Some of the time 3	Almost Always 4	Always 5
a. Set goals or help in writing IEPs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Adapt activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Set individualized goals for children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Select appropriate materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Understand the individualized development of children with disabilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Talk to families about children's development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Communicate with therapists and specialists?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Other ways (specify) _____					

SECTION 7. FOUNDATIONS PROFESSIONAL DEVELOPMENT NEEDS

1. To what extent would you benefit from additional support/guidance to understand and use *Foundations*?

☐ Not at all ☐ A little ☐ Somewhat ☐ A lot ☐ Very Much

2. How receptive are you to receiving professional development related to *Foundations*?

☐ Not at all ☐ A little ☐ Somewhat ☐ A lot ☐ Very Much

3. Rate how much the following supports would help you with the use of <i>Foundations</i> in your classroom.					
	Not at All 1	A little 2	Some- what 3	A lot 4	Very Much 5
<i>Professional Development (PD)</i>					
a. PD related to integrating <i>Foundations</i> into lesson plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. PD development related to implementing <i>Foundations</i> into the curriculum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. PD related to using <i>Foundations</i> with families	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. PD related to using <i>Foundations</i> with children with disabilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. PD related to using <i>Foundations</i> with children who are DLL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Coaching specific to implementation of <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Professional Learning Communities (PLCs) with a focus on <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Resources and Print Materials</i>					
h. A copy of <i>Foundations</i> that you can use in your classroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Example lesson plans that are linked to or incorporate <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Examples of activities for families that incorporate <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Access to assessments that assess the areas of children's learning and development that are described in <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Access to curricula that aligns with <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Written resources that describe how to use <i>Foundations</i> with children with IEPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Written resources that describe how to use <i>Foundations</i> with children who are DLL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Written resources that describe how to use <i>Foundations</i> with families	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Other</i>					
p. Opportunities to work with teachers to create lesson plans that incorporate <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Financial support to attend <i>Foundations</i> trainings outside your center	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. In addition to the supports previously listed, are there any other supports that would help you use *Foundations* in your classroom?

5. Rate how much the following barriers/challenges prevent you from using <i>Foundations</i> in your classroom.					
	Not at All 1	A little 2	Some- what 3	A lot 4	Very Much 5
a. Lack of support from administrator (e.g., principal, owner, director)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Lack of available professional development related to using <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Insufficient resources regarding how to use <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. No time to plan classroom activities using <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Lack of financial resources to attend professional development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Lack of time to attend professional development related to <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Limited awareness of the <i>Foundations</i> document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Limited awareness of trainings on <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. No access to the <i>Foundations</i> document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. In addition to the barriers/challenges previously listed, are there any other barriers/challenges that prevent you from using *Foundations* in your classroom?

You have completed the survey. Thank you for your participation!

APPENDIX C

INTERVIEW PROTOCOL

Start Time: _____
Finish Time: _____

Interview Protocol: Interview & Document Review

Background Information: *To be completed with the teacher.*

ID Number: _____ Center: _____

Years in Field: _____ Years in Classroom: _____ Ages of Children: _____

Degree: _____ Major: _____

Which version(s) do you have (circle):

Original *Foundations* Revised *Foundations* Neither

Which version(s) do you use (circle):

Original *Foundations* Revised *Foundations* Neither

Open-Ended Questions: *To be completed with teacher and audio-recorded.*

1. Describe how you use *Foundations* in your work with children and families.
(Potential Probes: How do you use Foundations to plan activities? Plan circle time? Select materials? Setup learning environments? Plan transitions? Observe children? Document learning? Share information and/or activities with families?)
2. Tell me how you use *Foundations* to develop lesson plans.
3. How do you use *Foundations* when working with children who have an Individualized Education Plan (IEP)?
(Potential Probes: How do you use Foundations to adapt activities? Set goals? Select materials? Understand development of children with disabilities? Communicate with others?)
4. Have you worked with dual language learners in the past two years? If so, how do you use *Foundations* when working with children who are dual language learners?
(Potential Probes: How do you use Foundations to learn about DLL? Adapt activities? Set goals? Communicate with others?)
5. Out of all the possible ways you use *Foundations*, which are the most common/important ways you use *Foundations*? What are the least common/important ways you use *Foundations*?
6. What kind of professional development have you had in the last year on *Foundations*. Professional development (PD) includes trainings, seminars, webinars, professional learning communities, mentoring, and coaching. *(Note: Go through these questions for each PD opportunity the teacher received in the past year).*
 - a. What was the agency or who was the person who provided PD?
 - b. What was the format(s) of the PD (e.g., training, coaching, etc.)?
 - c. What was the duration of PD (i.e., number of days, number of hours)?
 - d. Was there any follow-up from the PD (e.g., support provided by TAs or supervisor, coaching, group meetings, PLCs)?
 - e. What do you remember from the PD and what did you learn in the PD that was useful? *(Prompts: Good trainer; hands-on, responsive, opportunities for application, received feedback, etc.)*

Open-Ended Questions (continued):

7. Describe any PD you have had on other topics (e.g., Literacy, Social & Emotional Development) that have incorporated or referenced *Foundations* specifically (*Note: Go through these questions for each PD opportunity the teacher received in the past year.*)
 - a. Who provided the PD?
 - b. What was the format(s) of the PD (e.g., training, coaching, etc.)?
 - c. What was the duration of PD (i.e., number of days, number of hours)?
 - d. How was *Foundations* incorporated into the PD?
 - e. Was there any follow-up from the training (e.g., support provided TAs or supervisor, group meetings, PLCs)?
 - f. What do you remember from the PD and what did you learn in the PD that was useful? (*Prompts: Good trainer; hands-on, responsive, opportunities for application, received feedback, etc.*)
 8. What PD do you feel like you still need to use *Foundations* more effectively in your classroom?
 9. What supports do you need from your administrators to be able to use *Foundations* more effectively in your classroom?
 10. What are the biggest barriers or challenges you have when it comes to understanding and using *Foundations* in your classroom (e.g., challenges attending PD, learning from PD).
-

Document Review/Collection: *Note: Item to be collected or photographed. Documents will be used as evidences to describe ways in which teachers use Foundations.*

- Lesson plan
 - Bulletin boards displays that incorporate *Foundations*
 - Parent newsletters that incorporate *Foundations*
 - Activities or handouts given to families that incorporate *Foundations*
 - Additional documents recommended by the teacher (if applicable)
-

APPENDIX D

ELECTRONIC SURVEY

Foundations Survey (Electronic Survey Questions - Qualtrics)

The following survey should take approximately 5 minutes to complete. This survey is for a research study on early childhood practitioners' knowledge and use of *North Carolina Foundations for Early Learning and Development (Foundations)*. Your participation is completely voluntary and you may stop the survey at any time. If you have questions, please contact Teresa Sumrall at tsumrall@uncg.edu.

1. Please indicate the county in which you primarily work.

2. What is your current position? (check one)

- ☐ Preschool Teacher
 ☐ Preschool Assistant Teacher
 ☐ Infant/Toddler Teacher
☐ Infant/Toddler Assistant Teacher
 ☐ Director or Administrator
 ☐ T/TA Provider
☐ Other (specify) _____

3. Check the box that best describes your center or program. (check one)

- ☐ Head Start
 ☐ Public School
 ☐ Child Care
☐ Family Child Care Home
 ☐ Other _____

4. Does your child care center/program currently have NC Pre-K funding?

- ☐ Yes
 ☐ No
☐ Not Sure
 ☐ I do not work at child care center/program

5. What is the highest level of education you have completed? (check one)

- ☐ GED
 ☐ High School Diploma
 ☐ Some Undergraduate Courses
☐ Associate's Degree
 ☐ Bachelor's Degree
 ☐ Graduate Degree

6. Including this year, how many years have you been working in early childhood education?

_____years

7. Are you familiar with the following version(s) of *Foundations*? (check all that apply)

- ☐ Original *Foundations* for preschoolers (published in 2005)
 ☐ Revised *Foundations* (published in 2013)
☐ Original *Foundations* for infants and toddlers (published in 2008)
 ☐ I have never heard of *Foundations*

8. Which version(s) of *Foundations* do you currently use in your work (check all that apply)

- ☐ Original *Foundations* for preschoolers (published in 2005)
 ☐ Revised *Foundations* (published in 2013)
☐ Original *Foundations* for infants and toddlers (published in 2008)
 ☐ I do not use *Foundations*

9. If you have a copy of *Foundations*, where did you get it?

_____ ☐ I do not have a copy

10. What *Foundations* trainings have you attended in the last year? (check all that apply)

☐ *Effective Teacher Practices Supporting NC Foundations for Early Learning and Development*, Dpt. Public Instruction

(Check all the modules you have completed)

☐ Module 1: Overview

☐ Module 5: Behavior Expectations & Rules

☐ Module 2: Formative Assessment

☐ Module 6: Schedules & Routines

☐ Module 3: Promoting Positive Relationships

☐ Module 7: Directions & Feedback

☐ Module 4: Classroom Design

☐ *NC Foundations for Early Learning and Development*, Local Child Care Resource & Referral (CCR&R), (0.5 CEU)

☐ *It Starts with Us: Solid Foundations, Successful Futures*, Foundations Conference in Charlotte, NC (3/14/2015)

☐ Pre-service or In-service Training with my Program/Child Care Center

☐ Other (specify) _____

☐ I have not received any training on *Foundations* within the last year.

11. If you received professional development specifically on *Foundations* within the last year, how many hours of training did you receive?

_____ Hours

12. To what extent would you benefit from additional support/guidance to understand and use *Foundations*?

☐ Not at all

☐ A little

☐ Somewhat

☐ A lot

☐ Very Much

13. Rate to what extent the following barriers/challenges prevent you from using *Foundations* in your professional work.

	Not at All 1	A little 2	Some- what 3	A lot 4	Very Much 5
a. Lack of support from administrator (e.g., principal, owner, director)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Lack of available professional development related to using <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Insufficient resources regarding how to use <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. No time to plan classroom activities using <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Lack of financial resources to attend professional development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Lack of time to attend professional development related to <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Limited awareness of the <i>Foundations</i> document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Limited awareness of trainings on <i>Foundations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Access to the <i>Foundations</i> document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. In addition to the barriers/challenges previously listed, are there any other barriers/challenges that make it more difficult for you to use *Foundations* in your professional work?

Thank you so much for completing the *Foundations* Survey!